

FLIGHT

The
AIRCRAFT
ENGINEER
&
AIRSHIPS

First Aero Weekly in the World

Founder and Editor: STANLEY SPOONER

A Journal devoted to the Interests, Practice, and Progress of Aerial Locomotion and Transport

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DIARY OF FORTHCOMING EVENTS

Club Secretaries and others desirous of announcing the dates of important fixtures are invited to send particulars for inclusion in the following list:—

1925	
Mar. 19	Capt. F. Tymms: "Practical Navigation of Aircraft," before R.Ae.S.
Mar. 23	Entries close for Schneider Cup Race.
Mar. 23	Entries Close for Gordon Bennett Balloon Race.
Mar. 25	Royal Aero Club Annual General Meeting.
Mar. 26	Dr. Eckener (Managing Director, Zeppelin Airship Co.): "Modern Zeppelin Airships," before R.Ae.S. (Society of Arts).
Mar. 30	Royal Aeronautical Soc. Annual General Meeting.
Apr. 23	Colonel F. Searle: "The Maintenance of Commercial Aircraft," before R.Ae.S.
Apr. 24	Commander C. D. Burney, C.M.G., M.P., R.N.: "The Position of the Airship in Aerial Transport," before I.Ae.E.
Apr. 30	Wilbur Wright Lecture, Rear-Admiral D. W. Taylor: "Some Aspects of the Comparison of Model and Full-Scale Tests," before R.Ae.S.

EDITORIAL COMMENT.



BETWEEN 17,000 and 18,000 miles flown since November last, in climates ranging from the heat of India and the East, to the snowstorms of Central Europe, over country of all imaginable kinds, from the Himalaya mountains to low-lying plains, such briefly is the record of the magnificent flight just concluded by the return to Croydon aerodrome, on March 17, of Sir Sefton Brancker, Director of Civil Aviation, and Mr. Alan J. Cobham, the famous De Havilland pilot. It is almost impossible fully to appreciate the value of such a flight, undertaken, as it was, not as a spectacular "stunt," but as mainly a business proposition. It was necessary that our very energetic Director of Civil Aviation should visit the East with a view to ascertaining the possibilities of organising Imperial air routes, and before these can be planned and inaugurated it is essential not only that a survey should be made, but also that countries whose goodwill and co-operation are essential to success should be visited. That being so, it was decided that the only way satisfactorily to carry out such a tour would be by air, and the De Havilland D.H.50 was not unnaturally chosen as the most suitable machine for the purpose. The type had already demonstrated its reliability at home and abroad, and the Siddeley "Puma" engine is one from which Mr. Cobham has had extensive and highly satisfactory service. Cobham's past experience in touring by air to remote corners of Europe and Northern Africa without serious trouble rendered him peculiarly qualified for the task of piloting the machine that was to carry Sir Sefton to India and back, and so the combination which has now completed its task came into being very naturally and very logically.

Into details of the flight it is not proposed to go here, as these have been given in FLIGHT week by week since the start on November 20 last. It is worthy of special note, however, that, with the exception of the one forced landing in Germany—due, it should be noted, not to engine trouble but to a snowstorm—the tour has been without a single accident of any kind. In view of the extraordinarily

varied conditions met with on the journey, this fact bears splendid testimony to the excellence of British aircraft and aero engines, no less than to the skill of Mr. Cobham as a pilot, and of Mr. Elliott as an engineer. The fact that any engine under such conditions as existed should never develop the slightest trouble, should be coupled with the meticulous care bestowed upon it by the engineer in charge—Mr. Elliott—who, working quietly and without fuss, saw to it that the "Puma" was ready to purr whenever its services were required. To him, therefore, also much credit is due.

The chief of the expedition, Air Vice-Marshal Sir Sefton Brancker, has, ever since he took over the position of Director of Civil Aviation, shown his keenness to fly and his determination to encourage, in every way, not least by personal example, the use of flying as a practical, speedy, and safe mode of travel, and by the flight to Burma and back he has still further consolidated the position which he already held as perhaps the most popular, and certainly the most hard-working, head of civil aviation we have ever had. That visits by air of an official as highly placed as is Sir Sefton have impressed the various people with whom he has come into contact during the tour is not to be doubted, and this, coupled with the fact that "the youthful General," as he is often affectionately called on the Continent, has the gift of making friends wherever he goes, will undoubtedly have done a very great deal towards strengthening British prestige in the countries visited.

As to the direct results of the tour, it is too early to speak yet, but it can, we think, be said that, on the whole, Sir Sefton has been favourably impressed with the possibilities of air routes to and in the East, and that during the next few months we may hope to see real progress being made with the extension of existing services. It will be a very long time before airship services to India and Australia become practical propositions, and a very great deal of research and practical experimental work will have to be done before the possibilities of lighter-than-air can be definitely ascertained; in the meantime, as Mr. Holt Thomas points out in a letter to *The Times*, the aeroplane has proved itself, or, as he puts it, "has served its apprenticeship," and we know definitely its capabilities. While waiting for the airship to be developed into a practical transport medium, do not let us lose sight of what the aeroplane (or, of course, seaplane) can do already. Other countries are forging ahead, France and Germany, in particular. Unless we really make a start in the immediate future, we shall wake up one fine day and discover that a network of commercial aeroplane routes has already been spread over Europe and

parts of the East by our competitors, and then it will cost us a great deal more to make up the time lost than if we attack the problem at once. The technical obstacles can, we feel convinced, be overcome. The financial difficulties also. There only remains the question of coming to an agreement with our neighbours in the air, so to speak, France and Germany. Before air routes to Egypt, India and Australia can be inaugurated, it will be necessary to obtain permission to run services across these countries, but delicate as is the position in this respect, it should be capable of being arranged, and we are sure the recent visit to those countries of Sir Sefton Brancker will have done much towards an agreement acceptable to all concerned.

Of technical information and experience collected on the tour to Burma and back doubtless Sir Sefton will have a detailed report to make, and it may be taken for granted that the de Havilland Aircraft Co. will benefit by Cobham's magnificent flight, not only from the credit which the flight reflects on the particular type of machine used, but also in a general way as to how different materials such as wood, fabric, three-ply, etc., behave under widely-varying weather conditions. When we saw the machine at Croydon on the day of its return, it looked very little the worse for its 17,000 miles' journey, its 200 hours in the air and its many more hours on the ground in all sorts of places. The flight has, therefore, demonstrated that even aeroplanes of ordinary construction are capable of use on Imperial air routes, and that all-metal machines, desirable as they may be, and offering as they ultimately may do the best solution, are by no means essential for a start, at any rate. Incidentally, it would also appear that the three-engined aeroplane, although it may offer somewhat greater freedom from forced landings, is far from being an absolute necessity, for day-flying, at any rate.

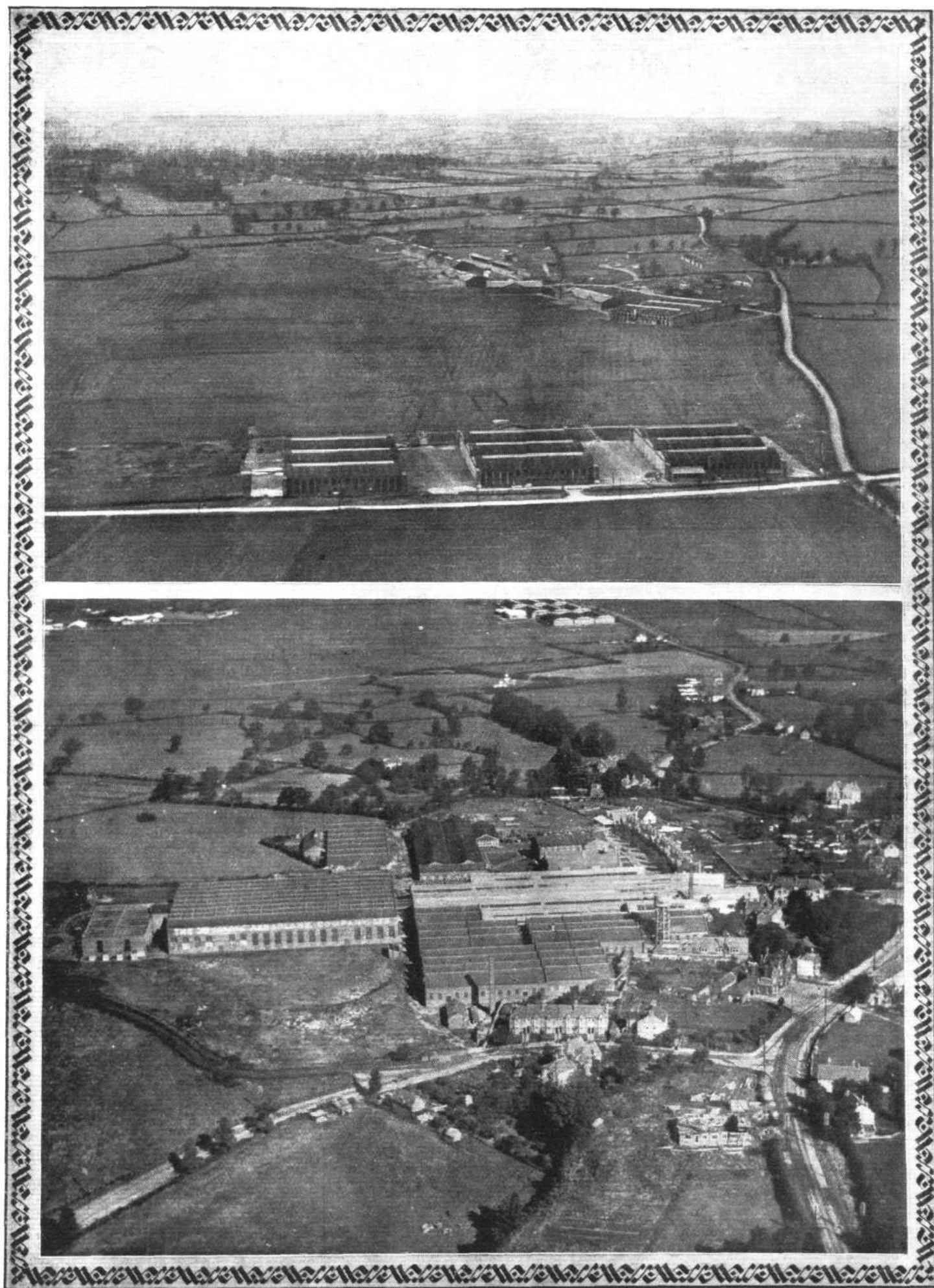
Although lacking in spectacular interest, the flight to Burma and back is nevertheless a highly meritorious one, and we think it will be found that its chief merit lies in the convincing manner in which the aeroplane was used for a practical business trip. Sir Sefton Brancker had to make calls in many capitals, as well as studying geographical and atmospheric conditions, and no attempt was made to cover distances in record time. The actual flying hours, however, were only a little over 200, so that, with any degree of luck, the out-and-home journey should be capable of being made, over organised routes, in about three weeks. Even if the flight had done nothing but demonstrating this fact, it would have been worth while. As it is, the tour has done a good deal more, and British aviation in general owes much to those responsible for its organisation and successful execution.



An Air Tragedy of the Desert

AN Air Ministry *communiqué* states that the remains recently discovered in the desert in Iraq have been definitely identified as those of Flight-Lieutenant William Conway Day, M.C., and Flying Officer Donald Ramsay Stewart, who were reported missing after making a forced landing on the morning of July 24, 1924. Rescue machines discovered the damaged aeroplane on the afternoon of the same day, and footprints were traceable for about 40 yards in the direction of Jalibah Railway Station. Some rations and a drum containing 3½ gallons of water were found in the aeroplane, and from the position of the drum with a funnel resting on it, it is presumed that the officers had filled their water bottles before leaving the machine. From traces of blood which were found on the

machine it appeared that the pilot, Flight-Lieut. Day, had sustained a slight injury, but no message had been left in the machine, and in spite of exhaustive search by every available means for four days no trace of the missing officers could be found. In the light of the recent discovery it is considered probable that on account of Flight-Lieut. Day's injury both the officers were prompted to seek assistance at the Railway Station at Jalibah, about 12 miles due north of the spot where the aeroplane landed, but from the positions where the remains were found it was obvious that the unfortunate officers had lost their way in the attempt. In view of the time of day and the season during which they were subjected to exposure, there is no reasonable doubt that death ensued from heat exhaustion.



[Copyright Aerial Photograph by Aerofilms, Ltd., The London Aerodrome, Hendon, N.W. 9.]

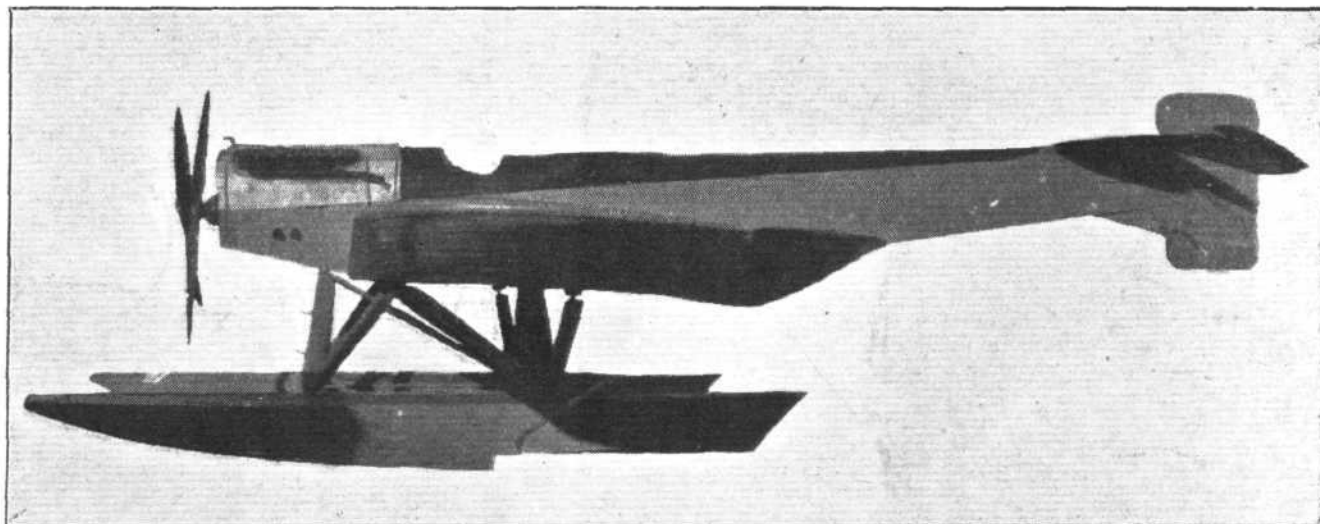
BRITISH AERODROMES II: Two views of the "Bristol" works and aerodrome at Filton. In the lower photograph the works are seen in the foreground, with some of the aerodrome sheds in the background. The upper photograph shows the aerodrome at closer quarters.

A SWEDISH RECONNAISSANCE TWIN-FLOAT SEAPLANE

The Type S.II, with Rolls-Royce "Eagle" Engine

THE fact that the S.II seaplane of the Svenska Aero A.-B. of Stockholm bears such a strong family resemblance to the famous Hansa-Brandenburg seaplanes of the war period is explained when it is pointed out that the S.II, like the Hansa-Brandenburgs, was designed by Herr Ernst Heinkel, who was once upon a time chief designer to the latter company,

formers, and three-ply covering. In front the fuselage proper terminates in a transverse fireproof bulkhead which separates the wood construction from the all-metal engine mounting, thus reducing fire risk. The pilot occupies the front cockpit, whence his view in all directions, except downwards, is of course excellent, owing to the low placing of the



Side view of the "S.II."

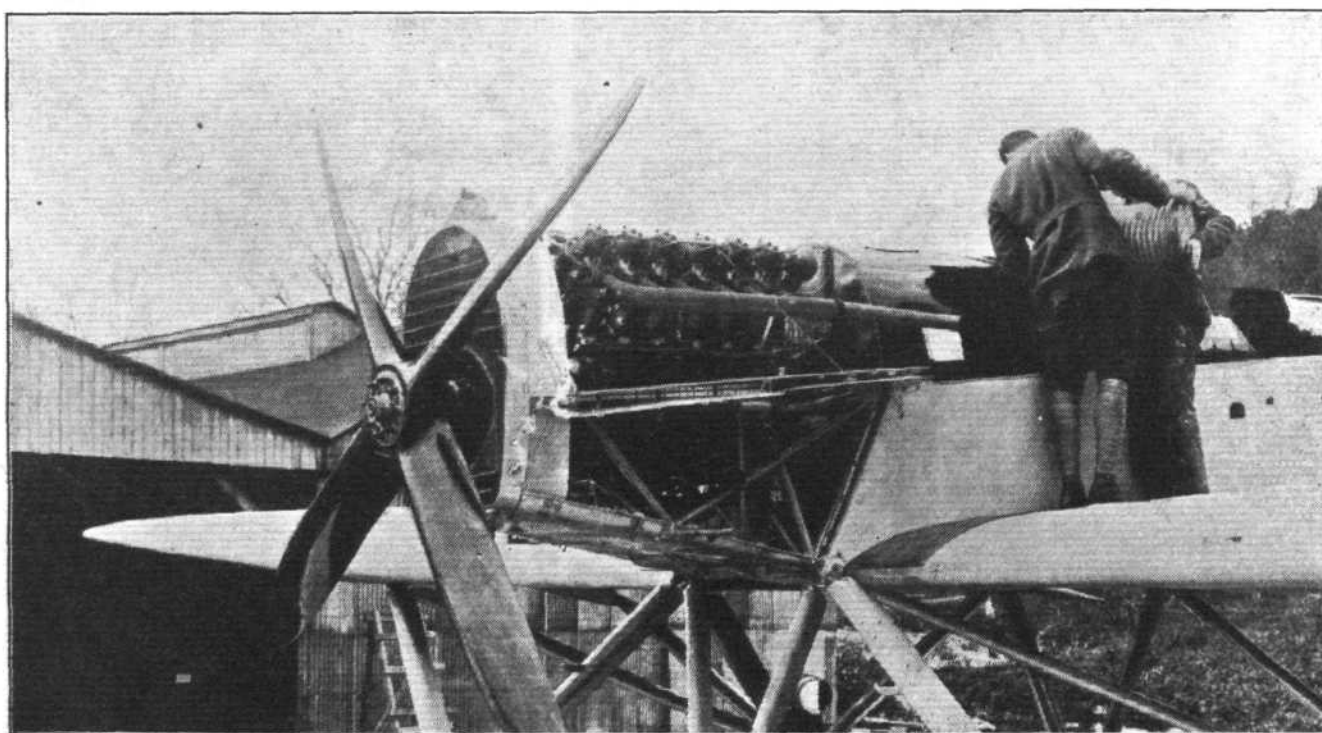
and who has now established his own factory at Warnemünde. The Svenska Aero Aktie Bolaget of Stockholm builds Heinkel machines under licence.

Of the same general lines as the original Hansa-Brandenburg seaplanes, the Swedish S.II differs from the prototype mainly in having a larger wing area, and, consequently, lighter loading, and in floats of larger capacity than those of the German machine. The result has been to improve not only the performance as regards get-off and climb, but also the seaworthiness of the machine, and the S.II is now considered to be a useful open-sea reconnaissance type, and is extensively employed by the Swedish air services. As a type, the machine is of the low-wing, semi-cantilever monoplane form, and it possesses the feature of a raised tail which gives the rear gunner a better field of fire.

The flat-sided, flat-bottomed fuselage is of wood construction, with four longerons, transverse bulkheads and

wing. It will be seen that from the cockpit it is possible to see the noses of the floats, so that presumably taking off and alighting presents no particular difficulties. The gunner's cockpit is aft of and very close to the pilot's, so that communication is facilitated. Like the pilot, the gunner has a very unrestricted view and field of fire, and he can even look down vertically, as the trailing edge of the wings is cut away near the fuselage. The gunner's cockpit is very roomy, and contains in addition to the usual guns and ammunition, wireless equipment and a 50 cm. camera built into the fuselage to take vertical views.

As already mentioned, the engine mounting is in the form of steel tubes, and forms a complete unit, attached by four conical bolts to corresponding fittings at the corners of the fireproof bulkhead. The installation is so arranged that the whole engine unit can be removed and replaced in a very short time, while for engine-test purposes, the unit can be



Nose of the "S.II," showing tubular mounting of the Rolls-Royce "Eagle" engine.

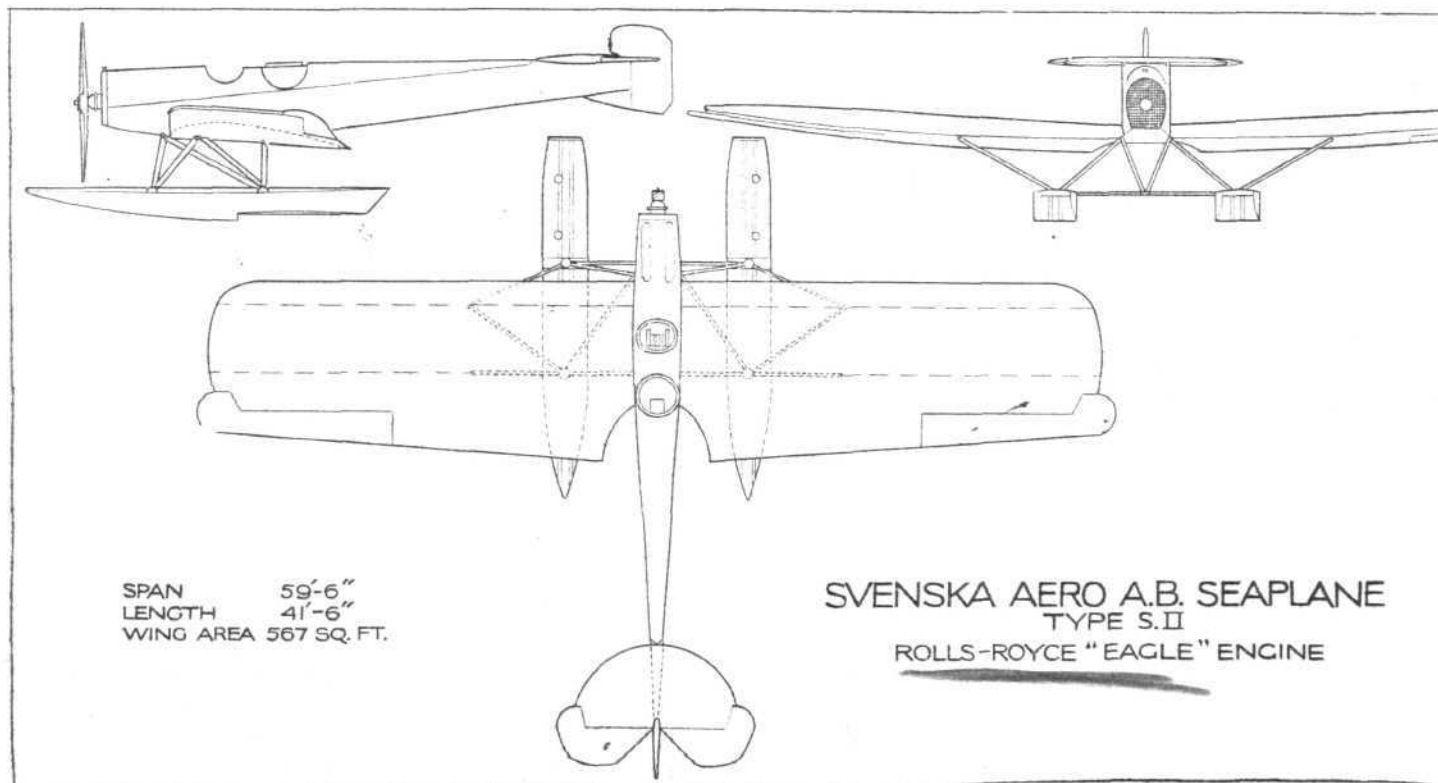


SWEDISH SEAPLANE, "S.II," WITH ROLLS-ROYCE ENGINES : Our photograph shows a formation of these machines flying over the Swedish coast.

bolted to a suitable stand and tested under conditions resembling those obtaining in the actual machine. The engine fitted is a 360 h.p. Rolls-Royce "Eagle," and the installation is partly shown in one of our photographs. The engine cowling is quickly and easily removed, when the whole of the engine unit can be inspected. The petrol tank, which has a capacity sufficient for five hours at full throttle, is placed immediately aft of the engine bulkhead, and is, as will be seen from the photograph, replenished by men standing on the inner end of the wings. A nose radiator of usual type, fitted with shutters for varying the cooling, is provided, the propeller shaft passing through it.

Constructionally, the wings are of normal type, with box spars of spruce and three-ply, spruce ribs, and fabric covering. The various compartments of the box spars are not entirely separated from one another, that is to say, the wood blocks, or partitions, are provided with openings, and the interior

of the spars can, it is stated, be ventilated by means of air pumps so as to get rid of any moisture that may have collected. The internal drag bracing is in the form of steel tube drag struts and stranded cables. The wing is built in two halves, attached to the sides of the fuselage, and braced by N-struts to the floats below. It is stated that the factor of safety of the wings is 10.5, but it should be pointed out that this figure is based upon the loads in normal horizontal flight. The triangulation of the float undercarriage struts, which are weldless steel tubes with wood fairings, can be seen in the general arrangement drawings. The floats themselves are of the single-step type, and are of all-wood construction. They are covered with ply-wood and provided with several water-tight bulkheads, each compartment having its inspection door. It is stated that the float volume is such that one float will support the machine, so that sinking is practically precluded. The attachment of the floats to their struts



SWEDISH "S.II" SEAPLANE, ROLLS-ROYCE "EAGLE" ENGINE : General arrangement drawings, to scale.

is such that a float can be quickly removed without interfering with the undercarriage structure in general.

As regards the general handling of the S.II, the machine is said to be very pleasant to fly, to get "unstuck" very easily and quickly and to land very slowly. The lateral control is said to be very effective, and although a trimming tail is not fitted, the tail plane can be so adjusted that with the engine running all-out the machine becomes tail-heavy, i.e., climbs, while at cruising speed it flies horizontal and with engine throttled it goes into a glide quite automatically.

In other words, the machine can be made to "fly on the throttle."

The weight of the machine empty is 1,700 kgs. (3,740 lbs.), and with petrol for five hours at full throttle, pilot, gunner, machine guns and ammunition, wireless outfit and camera, the total loaded weight is 2,450 kgs. (5,400 lbs.). The top speed is stated to be 185 km./h. (115½ m.p.h.), and the range 925 km. (575 miles). The climb to 1,000 metres (3,280 ft.) occupies 4½ minutes, and to 2,000 metres (6,560 ft.) 10 minutes. No figures as to landing speed are available.

The Royal Aero Club of the United Kingdom

OFFICIAL NOTICES TO MEMBERS

BANQUET TO AIR VICE-MARSHAL SIR SEFTON BRANCKER AND MR. ALAN J. COBHAM

The Royal Aero Club and the Society of British Aircraft Constructors will entertain Air Vice-Marshal Sir Sefton Brancker and Mr. Alan J. Cobham at a banquet at the Savoy Hotel on Monday, 23rd inst., at 7.30 p.m. Tickets £1 1s. each may be obtained from the Secretary, Royal Aero Club, 3, Clifford Street, London, W. 1.

NAMES OF MEMBERS NOMINATED FOR THE COMMITTEE

1. Darby, Lieut.-Col. M. Ormonde, O.B.E.
2. Dunville, Lieut.-Col. John D., C.B.E.
3. Holden, Brig.-Gen. Sir Capel, K.C.B., F.R.S.
4. Hubbard, Wing-Comdr. T. O'B., M.C., A.F.C.
5. McClean, Lieut.-Col. F. K., A.F.C.
6. Manning, W. O.
7. Ogilvie, Lieut.-Col. Alec, C.B.E.
8. Page, F. Handley, C.B.E.
9. Sippe, Maj. Sydney, V., D.S.O.
10. Sopwith, T. O. M., C.B.E.
11. Wilson, Capt. Charles B., M.C.

ANNUAL GENERAL MEETING

The Annual General Meeting will be held at the Club premises, 3, Clifford Street, London, W. 1, on Wednesday, March 25, 1925, at 6 o'clock.

Agenda

1. Chairman's Report.
2. To announce result of ballot for Committee.
3. To alter Rule 50 as follows:—

The subscription for members shall be £5 5s. per annum, and for lady members £2 2s. per annum, or such other sum

as may be decided upon in General Meeting, and the entrance fee such sum as the Committee may from time to time determine.

The subscription for members who are officers serving in the Royal Air Force or the Royal Air Force Reserve, or officers (past and present) engaged in the Air Ministry Departments, or naval and military officers attached to the Royal Air Force for service, shall be £2 2s. per annum.

4. To elect Vice-President and Council for the ensuing year.

The following are recommended by the Committee:—

Vice-President.—The Duke of Sutherland.

Council.—The Earl of Lonsdale; Admiral of the Fleet the Earl Beatty, G.C.B., O.M., G.C.V.O., D.S.O.; the Right Hon. Lord Hugh Cecil, M.P.; the Right Hon. Lord Weir the Lord Howard de Walden; the Lord Montagu of Beaulieu, K.C.I.E., C.S.I.; Admiral of the Fleet the Right Hon. Sir Edward Seymour, G.C.B., O.M., G.C.V.O.; Admiral the Hon. Sir Edmund Fremantle, G.C.B., C.M.G.; the Right Hon. Sir Samuel Hoare, Bart., C.M.G., M.P.; Air Chief Marshal Sir Hugh M. Trenchard, Bart., G.C.B., D.S.O.; Sir David Salomons, Bart.; Sir Basil Zaharoff, G.B.E., G.C.B.; Count Henry de la Vaulx; the Right Rev. Bishop Welldon; Martin Dale; André Michelin.

5. Motion by Comm. F. L. M. Boothby, R.N.:—

"That the Committee should render an explanation of their failure to carry out the resolution of the General Meeting in 1924 with regard to the allocation of their funds in fair proportion for the encouragement of aeroplanes, seaplanes, and airships."

Offices: THE ROYAL AERO CLUB,

3, CLIFFORD STREET, LONDON, W. 1.

H. E. PERRIN, Secretary

At the Levée

At the Levée held on March 10 at St. James's Palace by His Royal Highness the Prince of Wales, on behalf of H.M. the King, the following were present: Air Marshal Sir John Salmond, Principal Air Aide-de-Camp; Group Capt. C. Kilner; Sir Samuel Hoare, Secretary of State for Air; Comdr. J. C. Hunsaker; Comdr. Don J. A. Games; Maj. Silvio Scaroni; Maj.-Gen. Ren-ichiro Okamoto; Senor Col. Don Fernando Rich; Col. Mossberg; Col. J. T. C. Moore-Brabazon; Air Vice-Marshal Sir Geoffrey H. Salmond, etc. Amongst those presented to the Prince of Wales were: Flight-Lieut. H. Collins; Flight-Lieut. A. Elliott; Sqdn.-Ldr. R. Field; Flight-Lieut. W. Fry, M.C.; Wing-Comdr. C. Gould; Sqdn.-Ldr. E. Grenfell, M.V., D.F.C., A.F.C.; Flight-Lieut. H. Hampton, D.F.C.; Group Capt. C. Kilner, D.S.O., A.D.C.; Sqdn.-Ldr. F. Laws, O.B.E.; Air Commodore C. Newall, C.M.G., C.B.E., A.M.; Flight-Lieut. W. Nicholl; Flying Officer A. Padley; Air Marshal Sir John Salmond, K.C.B., C.M.G., C.V.O., D.S.O., A.D.C.; Air Vice-Marshal F. Scarlett, C.B., D.S.O., Sqdn.-Ldr. F. Sowrey, D.S.O., M.C., A.F.C.; Flight-Lieut. F. Wright, etc.

Air Ministry Officials Entertained

The Secretary for Air (Sir Samuel Hoare) and Air Marshal Sir John W. Salmond, Air Vice-Marshal Sir Geoffrey Salmond, Air Vice-Marshal J. M. Steel, Sir Geoffrey Butler, Sir Sigmund Dannreuther, Mr. H. W. W. McAnally, Mr. B. E. Holloway, Mr. C. L. Bullock, Mr. J. A. Webster, Lieut.-Col. I. A. E. Edwards, and Squadron-Leader A. R. Boyle, of the Air Ministry staff, were entertained at luncheon recently at

Claridge's Hotel by the Foreign Air Attachés and the Naval and Military Attachés accredited for air duties. Capitaine de Frégate Sablé, Air Attaché at the French Embassy, presided.

Ministerial Air Tour of the East

The delegation, headed by Mr. Amery and Sir Samuel Hoare, which is leaving for Iraq and Palestine today, will consist of about eight persons, and two aeroplanes will be needed for the aerial voyages of the party. Mr. Amery will be assisted by Captain Wallace, his Parliamentary private secretary. The party are due to leave Ismailia by air on March 26, arriving at Baghdad on the following day. The programme provides for a stay of 17 days in Iraq. The first week is to be given up to conferences, and if these are completed in time the Air Secretary will spend ten days in inspecting the air stations at Mosul, Kirkuk, Basrah, etc. The visitors will leave Baghdad by air on or about April 14, arriving at Ramleh, for Jerusalem, on the following day. They will fly from Jerusalem to Cairo, and will leave Alexandria for home on April 24. Travelling by way of Brindisi and Rome, Mr. Amery and Sir Samuel Hoare should be back in London on May 1.

Aircraft at Wembley

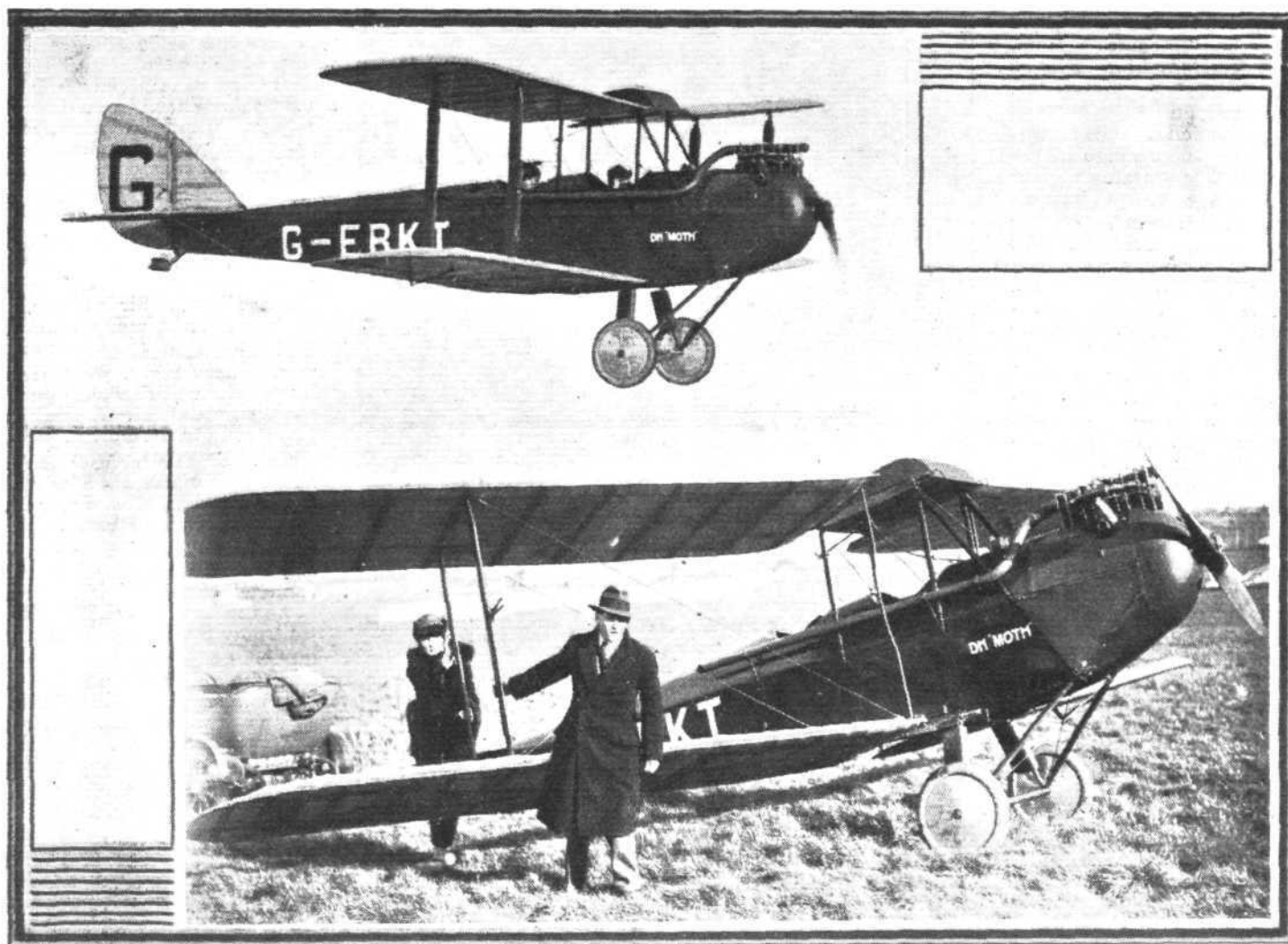
The Committee of Management of the Society of British Aircraft Constructors has decided not to proceed further with the scheme for a proposed Aircraft Exhibit at Wembley this year. The subject has been gone into with the Air Ministry, who were prepared to give financial assistance, but the heavy expenditure which would fall upon the industry has decided the Committee not to proceed with the scheme.

LIGHT 'PLANE AND GLIDER NOTES

At a conference between representatives of the Light 'Plane Section of the Royal Aero Club and of the provincial light 'plane clubs, on March 16, the subject of the amended offer of the Air Ministry was under discussion, and it was decided to accept the new offer. Briefly the amended offer of financial aid consists in the presentation, by the Air Ministry, of two complete light 'planes and one spare engine to each club, and of an annual grant of £1,000, or, more correctly speaking, of a grant of £1,000 for the first year, the amount of the financial assistance for subsequent years to be considered again at a later date. The value of the two machines and one spare engine is not to exceed £2,000, but if less than this amount the Air Ministry will give the balance either in cash or in further equipment.

HITHERTO one of the greatest obstacles has been the question of insurance. It is now proposed that various

hand, as no definite statement has been made as to permissible capacity, etc., it must be presumed that our engine designers have not been able to get on with new designs, and so the position is really far from satisfactory in so far as making an early start is concerned. We wonder if it would not be possible, now that the light 'planes of last year have been tested at Martlesham, to pick out a few whose engines have been behaving reasonably well and allow the clubs to use them until a final decision as to types can be made. The machines and engines may not be ideal, but, as we stated last week, most, if not all, of the flying will be over or in the immediate vicinity of aerodromes, and thus possible engine failures should not have serious consequences. We imagine that the manufacturers of the machines and engines would be quite willing to give the clubs very favourable terms, as the use of the machines would in any case be preferable to having them "rotting in their sheds," to borrow a phrase familiar



THE D.H. "MOTH" : These photographs tell their own story, the machine being seen, in the lower picture, having its wings spread from the folded position in readiness for flight, and above it is seen in full flight, photographed from another aeroplane.

clubs should undertake the insurance of ground equipment, third-party risks, etc., and that the Air Ministry should, during the first year, provide half the cost of replacement of the two machines originally supplied, should they be so badly damaged as to have to be written off. Assuming the cost of each machine to be £750, the risk incurred by the club cannot thus exceed £750, and that only if both machines are written off.

IN the meantime it must, we fear, be some considerable time before a real start can be made, for, although we have a number of excellent two-seater light 'planes, there is at the moment no "approved" light 'plane engines. Last year's machines were designed for engines of 1,100 c.c. capacity, and presumably few of them would be strong enough to be fitted with the Airdisco "Cirrus," for instance. (Not that this engine is "approved" as yet.) On the other

from airships. It should be remembered that at Lympne last year the engines were called upon to run at very high speeds for competition purposes, and that the demands upon them would, presumably, be a good deal smaller when used for cruising around an aerodrome for fairly short periods at a time. Even if the engines were all that is bad (and this certainly is not the case), the worst of them would run for 10 or 15 minutes at a time if "nursed," and the best of them for much longer. The very fact of having to look after delicate engines would be a valuable experience and training for those club members keen on the practical work, and who will deny that a knowledge of caring for delicate engines is in itself a valuable asset even if the day should come when such engines are a thing of the past. May we, therefore, suggest that the clubs be allowed to "beg, borrow, or steal" such of last year's two-seaters as they like best, so that a start may be made in the immediate future.

SIR SEFTON BRANCKER'S AIR TOUR

Alan Cobham Again Makes Good

THE wonderful seventeen-thousand-five-hundred-mile aerial tour to India and back undertaken by the Director of Civil Aviation, Sir Sefton Brancker, has—thanks to the combined efforts of Alan Cobham, the pilot, and Engineer Elliott—at last come to a successful conclusion. And, incidentally, British aviation, as a whole, has once again shown the world what *can* be done.

Originally, Sir Sefton expected to arrive back in England last Thursday, as reported in last week's *FLIGHT*, but he was gently but firmly reminded that he had arrived in the zone where "weather" comes from. They started from Prague on Wednesday, March 11, for Paris, but they encountered violent snowstorms over the whole range of the Bohemian mountains. After an attempt to fly through them (the storms, not the mountains), Cobham, for once in a way, was forced to turn back, near Pilsen, and return to Prague aerodrome. Three further attempts were made to get over the mountains and through the snow, and eventually they succeeded, but had not got very far into Germany—near Stuttgart—when snow once again proved too much. Cobham selected one of the little open patches in the forest and effected a safe landing in a small and very rough field on a hill-top. As it was much too small for taking off purposes, the D.H.50 was partially dismantled, and, with the assistance of the German villagers, was transported to an old German aerodrome some 50 miles back, when it was re-erected. After waiting some time for the snow to clear they resumed their journey to Strasbourg, where they arrived on Sunday, March 15.

On the following morning they flew on to Paris, arriving

safely at Le Bourget shortly before noon. The last stage of the tour, to London, was completed on Tuesday, March 17, when, after being delayed somewhat by head winds and bad

visibility, they left Le Bourget at 10.30 a.m. and arrived at Croydon aerodrome at 1.45 p.m. Their welcome back at Croydon was exceedingly enthusiastic—as, indeed, it should have been—and there was a crowd about 1,000 strong to receive them.

The Secretary of State for Air, Sir Samuel Hoare, was unable to be present, but the Air Ministry was well represented, and messages of welcome from the Secretary of State and the Under-Secretary were given to Sir W. S. Brancker. Two directors of Imperial Airways, Mr. H. Scott-Paine and Major Hills, were present, Sir Eric Geddes and the other directors being engaged at a board meeting. Mr. T. O. M. Sopwith, Chairman of the Society of British Aircraft Constructors, Sir Charles Wakefield, and many others well known in the aviation world, were there, while the Royal Aero Club was represented by Col. M. O. Darby and Commdr. H. Perrin.

Col. Edwards, who has acted as Deputy Director of Civil Aviation, was the first to greet Sir Sefton, who looked remarkably well—smiling and monocled, the same as ever.

As the hardy D.H.50, with its trusty Siddeley "Puma," landed gently on the aerodrome—of course, to the accompaniment of enthusiastic cheering—one outstanding feature must have impressed many who looked on. This was the extraordinarily smart and "new" appearance of the machine. It was hard to realise that this 'bus, with its three-ply fuselage smooth and unscratched, tight-fabric wings, etc.,



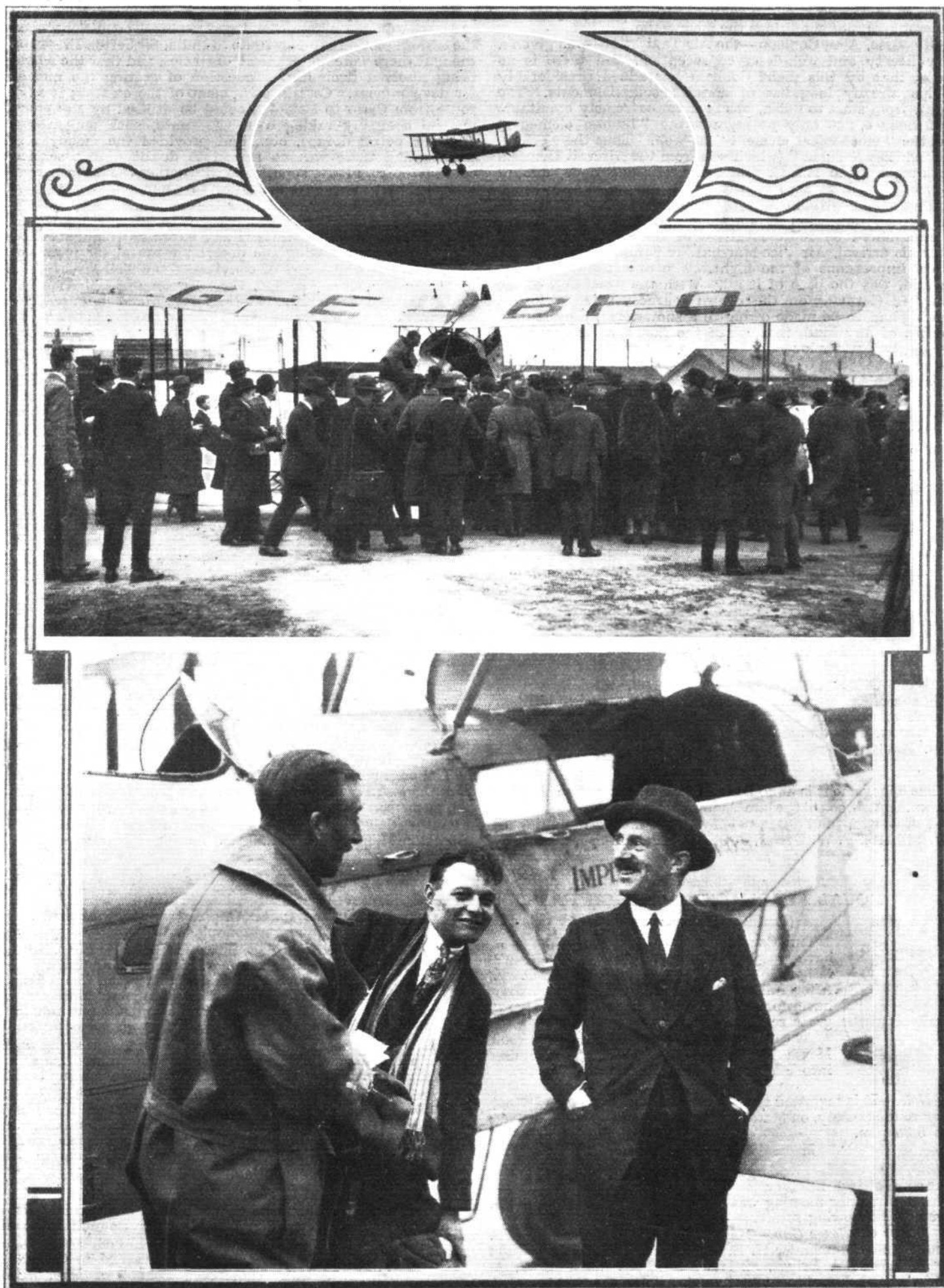
OFFICIAL WELCOME TO THE VOYAGERS: Maj. J. W. Hills and Mr. Hubert Scott-Paine at Croydon, where, on behalf of the Board of Imperial Airways, they met Gen. Sir Sefton Brancker and Mr. Cobham.

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**The End of a Perfect Trip:** Gen. Sir Sefton Brancker alighting from the D.H.50, while Mr. Elliott stands by on the wing, and Mr. Cobham greets his many friends.







**THE END OF A 17,000-MILE FLIGHT:** Above, the D.H.50 arriving at Croydon Aerodrome. In the centre it is seen surrounded by interested spectators, and below are the three happy travellers, from right to left, Gen. Sir Sefton Brancker, Director of Civil Aviation, Mr. Elliott, Engineer, and Mr. Cobham, Pilot.

had set out from England on November 20 last and had flown to India and back—a total of 210 hours' flying time—under all sorts of conditions the meanwhile.

Of course, Alan Cobham—the Air Taxi Pilot—was given a very hearty and well-deserved reception, and there is no doubt that by this flight Cobham has added considerably to his already long list of aerial accomplishments. The flight, from start to finish, has been an extremely creditable performance, not only as regards the "human element," but the "mechanical element" as well. Thus the D.H.50, the Siddeley "Puma" (which was from the Aircraft Disposal Co.'s stock), the K.L.G. plugs, the Titanine dope, and, of course, Smith's aero instruments, all of which have "functioned," without failure throughout, have maintained the British reputation for efficiency and reliability.

Interviewed by representatives of the press on the day after his arrival, Air Vice-Marshal Sir Sefton Brancker gave a few impressions of the flight. The outstanding feature, he said, was the ease of it all. With the exception of the delay in Germany on the return journey, when a forced landing had to be made owing to a snowstorm, they had no trouble of any kind, in spite of the fact that the machine was fairly heavily loaded. The trip had spoilt him entirely for any other form of travelling, being extremely comfortable and not in the least fatiguing. As an instance, Sir Sefton quoted his illness in India. After spending five very cold days at Delhi he began to suffer from what he thought was a feverish cold, but he undertook the flight to Calcutta, and in point of fact felt better on arriving there than he did when

he left Delhi, although it was found that he suffered from pneumonia and pleurisy and had to go into hospital.

As regards the climatic and geographical conditions over the eastern section of an air route to India, Sir Sefton Brancker thought there were no technical obstacles, and that the whole thing resolved itself into a question of getting the money for development. Certain equipment of the existing R.A.F. route from Cairo to Baghdad could be utilised by any commercial company taking over the route, such as wireless stations, petrol dumps, etc., and provided the money was forthcoming there was no reason to doubt that a service could be started fairly soon. Asked whether the Government was at liberty to grant subsidies to companies other than the Imperial Airways, Ltd., Sir Sefton stated that outside Europe the Government had a right to grant subsidies to other commercial companies if any expressed willingness to have a try at operating the desert air route, for instance. Again, it was a question of convincing the Treasury.

On the subject of airships, the Director of Civil Aviation said that the re-conditioned "R.33" would be used for experimental flights, and work would be undertaken in connection with discovering to what extent the monsoons were likely to interfere with regular airship services. A Government mooring mast and airship shed would be built at Karachi, which would then be used as a centre from which to explore experimentally weather conditions, the behaviour of airships under such conditions, and generally to accumulate data and information of value to any projected regular airship route.



#### Married

Flying Officer CHRISTOPHER O. TOWLER, D.S.M., R.A.F., only son of the late Matthew Towler, was married quietly on March 5, at Holy Trinity Church, Chelsea, to VIOLET L. CRAMPTON, only daughter of the late George Crampton and Mrs. Percival Fowler.

#### To be Married

The engagement is announced between ALEXANDER THOMAS LAING, R.A.F., son of the late Thomas Ross-Laing, of Aberdeen and Calcutta, and EILEEN MARY, youngest daughter of Mr. and Mrs. F. W. UPSON, of St. Leonards-on-Sea, Sussex.

The engagement is announced between JAMES ALEXANDER GORDON HASLAM, M.C., D.F.C., Flight-Lieut., R.A.F., son of the late Mr. and Mrs. John Bailey Haslam and HELEN KINNEAR, eldest daughter of the late Mr. W. M. Cuthbert, of Cape Town, South Africa, and of Lady Seymour-Lloyd and step-daughter of Sir John Seymour-Lloyd, K.C., of Headley Grove, Headley, Surrey.

The engagement is announced between LESLIE W. THRES, D.F.C., R.A.F., elder son of Mr. and Mrs. H. W. Thres, of 36, Emerson Road, Ilford, Essex, and BARBARA MARY, younger daughter of Mr. and Mrs. ARNOLD GAMBLE, of Gamston Manor, Retford, Notts.

### ROYAL AERONAUTICAL SOCIETY

#### (Official Notices)



THE Council have to announce that they have received Colonel Lockwood Marsh's resignation of the position of Secretary. After full consideration, they feel that they have no option but to accept this with very great regret.

At the Council's request, Colonel Lockwood Marsh has agreed to postpone the coming into effect of his resignation to May 1st.

*Note.*—It is regretted that the time of Dr. Eckener's lecture before the Society, on March 26th, was given as 7 p.m., instead of 5.30 p.m.

#### Aero Golfing Society

THE winter meeting was held at Addington on March 5, with the following results:—

*Winter Challenge Cup.*—Major R. H. Mayo, 85 less 9 = 76, and Lieut.-Commander H. E. Perrin, 90 less 14 = 76 (a tie); Commander W. Briggs, 82 less 5 = 77; Lieut.-Col. W. A. Bristow, 91 less 14 = 77; Squad-Leader C. H. Hayward, 77 plus 1 = 78; Sir Henry White Smith, 95 less 14 = 81; R. A. Reid, scratch, 83.

*Four Ball Bogey Foursomes.*—R. Reid (scratch), Lieut.-Commander H. E. Perrin (14), 6 up; and Capt. W. Aston (3) E. J. B. How (4), 6 up (a tie).

#### A New Junkers Commercial Aeroplane

ACCORDING to the *Junkers-Luftverkehr Nachrichtenblatt* of March 3, the new Junkers monoplane to which we referred in *FLIGHT* recently, is to be put on several of the Central European air routes this summer. The machine is a low-wing monoplane somewhat similar to the "Annelise" type, but has an engine in the nose and two built into the leading edge of the wing. Two pilots are accommodated side by side in the cockpit, and the cabin has seating accommodation for nine passengers. No information is given as to the power plants fitted, but it is stated that with engines of medium power, whatever that may mean, the machine has a top speed of 170 km./h. (106 m.p.h.). The overall length is given as 16 metres (52 ft. 6 ins.), the span as 29 metres (95 ft. 2 ins.), and the height as 5.5 metres (18 ft.), so that the machine is by no means a small one. The construction is the usual Junkers all-duralumin, with multiple spars of tubing and corrugated duralumin covering.

#### Dunning Memorial Cup

THE Dunning Memorial Cup, which is given annually to the officer who is considered by the Air Council to have performed the most distinguished service in connection with co-operation with the Navy, has been awarded to Observer Officer William Arthur Thompson, School of Naval Co-operation, Lee-on-Solent, for 1924.

#### Channel Islands Air Service Suspended

THE marine branch of Imperial Airways, Ltd., which for some time past has been running between Southampton and Jersey, has been closed down indefinitely.



## THE AIR ESTIMATES DEBATES IN THE HOUSE OF LORDS

IN the House of Lords, on March 11, the Duke of Sutherland asked if the Government were satisfied with the present rate of increase of the Air Force as laid down by the Secretary of State for Air in 1923, in view of the fact that it would take twenty years at the present rate to bring our Air Force to the level of the French Air Force, or whether they were relying on a World Disarmament Conference at a future date to make any further increase unnecessary. He pointed out that the Secretary for Air had told them a few days ago that we were in a minority of one to three as compared with the French Air Forces, which comprised 140 squadrons, consisting of 110 in France and 30 for overseas, each squadron consisting of nine aeroplanes. Our force would comprise at the end of this year 26 squadrons of 12 machines for home defence, making 312 machines as against France's 990 machines. Looking at the financial side, the expenditure on the French Air Force had increased from 211,000,000 francs in 1922-23 to 313,000,000 in 1923-24, and to 442,000,000 francs for last year. They did not come within any near approach of a one-Power standard, and it would take till 1936 to raise the strength of the Regular Air Force to this country to 40 squadrons. There were three courses open to the Government. The first was to accelerate our building and training programme very considerably. If this course were adopted the additional expense would have to be saved by economies in the other Services. Even though there might be difficulties, he believed acceleration of the expansion programme to be quite possible. During the War we succeeded in increasing our Air Force at a vastly greater rate than it was being increased today. The second course was to establish a permanent mutual security pact with France, which would cover our own aerial security, while we, with our Navy, would secure France's position on the seas and guarantee her support in the event of invasion from the East. The third course would be to hold a disarmament conference, at which America should be represented.

It was very difficult to include the aerial arm in any disarmament scheme, because it was very difficult, if not impossible, to differentiate between civil passenger machines and machines which might be converted into military bombing aeroplanes. Either a security pact or a disarmament conference would have the advantage of reducing the terrible expense which the taxpayer had to bear in respect of large armaments.

But whichever course the Government might pursue, he thought that the British public did not fully realise how our position had altered strategically during the past few years. The English Channel did not exist—we had become a Continental nation. We had to pay more for men and machines

than conscriptionist countries, and if we had to keep pace with them in aerial construction we must economise in other Services.

Systematic bombing from the air would make life in our industrial centres unthinkable and untenable, and it might conceivably force a premature and humiliating peace on the country owing to the panic pressure of a terror-stricken population.

Replying for the Government, the Marquess of Salisbury (Lord Privy Seal) said that he would not claim that the aerial position was completely satisfactory, but he would ask the House to consider the very great progress that had been made. The programme for the present year would add eight more squadrons to the existing 18. The standard at which the Government was aiming was 52 squadrons, so that at the end of this year the Air Force would have reached exactly half the standard at which the Government were provisionally aiming. He thought that the Duke of Sutherland had taken much too gloomy a view of the future, because the progress would quicken much more rapidly towards the end of the period of expansion.

In making these preparations the Government were not blind to the necessity for effecting whatever economies were possible. He did not want their Lordships to think that in their programme the Government were aiming an inch farther than they were bound to in the achievement of their object.

There was no country in the world more anxious to limit armaments than Great Britain, and anything the Government could do in this connection, whether on the ground, sea, or in the air they would be only too ready to do. If and when there occurred an opportunity for an international arrangement for the limitation of armaments His Majesty's Government would be the first to embrace it.

Lord Gorell asked why, if no country was more anxious than this to go into the question of the limitation of armaments, the Government could not take the initiative, instead of waiting till it saw a favourable opportunity created elsewhere. There were avenues well worthy of being explored. One was the possibility of arranging a limitation on the training of war pilots. He had hoped to hear something more definite on that question.

Earl Beauchamp said that it would be unfair to expect Lord Salisbury to say anything more as to disarmament, in view of the very delicate negotiations in progress at Geneva. He had hoped, however, to have heard some figures with regard to the proposed additions.

It was a great credit to this country that we preferred to pay our debts rather than increase our aerial armaments, and he would have hoped that other countries might have followed our example.

## IN THE HOUSE OF COMMONS

ON March 12 the House of Commons went into Committee of Supply, on a vote for 36,000 men of all ranks of the Royal Air Force, exclusive of those serving in India.

Sir A. Sinclair said that the Liberal Party could not approve of the increase in the estimates for the fighting Services, when the dangers were less formidable than they were in 1913 and when economic and social needs were greater, but it was not possible to take risks in relation to the air.

In 1914 to 1918 the Navy was still our sure shield; today it held supreme command of the seas, yet London could be bombed and destroyed within a few hours of the declaration of war without the Navy firing a shot in intervention. Therefore, the only possible defence against such a contingency is that which can be provided by the Air Force, and by no other fighting service. There were few Members who would not agree that the relative value of the three factors, the Air Force, the Army and the Navy, in the strategic equation was constantly changing, and that the Air Service was gaining rapidly at the expense of the other two Services.

No doubt hon. Members had followed the controversy in the U.S.A., and although the U.S.S. *Washington* was undoubtedly sunk by aircraft bombs, it was not possible to say how far one can go with the inference, but the time was inevitably coming when aeroplanes would be able to dominate operations by sea. It followed that it was of paramount importance that the development of the Air Force should not be cramped or hindered, or in any degree obstructed by the other two fighting Services, and that control over the

expenditure of any money voted should not be entrusted to officers of the other Services, whose view of the Air Force was merely that it should be ancillary to these older Services. They had been alarmed at the new departure that the Admiralty was to be responsible for the expenditure of the naval air arm. The true line of development in the organisation of our national defence was something in the nature of a Ministry of Defence, with the Air Ministry the dominant partner, rather than in the absorption of the Air Ministry by the other two fighting services.

He would ask what Imperial responsibility was the Air Force to undertake, and was there some standard likely to be the one standard at which we should aim?

We should know which was the maximum striking force of the strongest air power, and our comparison should be made with that striking force. He thought they should do what they could to call a halt in respect of this great and unproductive expenditure. If possible, we should save civilisation from the great risks to which it was exposed by the growth of air armaments. France was the largest air power in Europe, and we might be able to reach some agreement with that country.

One other important point on the military side was in respect to the strength of the Air Force reserves, and he would ask the Under-Secretary to let them know how they stood as regards the reserves to supply wastage of personnel in war, and to provide the means of expansion. He did not think sufficient was being done to encourage civil aviation.

He asked what had been done to prevent the whole vast area of Central Europe being blocked to British air lines, and if anything had been done to encourage a scheme of co-operation between France and ourselves for carrying mails by aeroplane to India.

Rear-Admiral Sueter declared that he regarded the Estimate as inadequate. He hoped that some of the older men would be put on a reserve list, to accelerate the promotions of younger men. It was very unsatisfactory that France should have three times as many aeroplanes as this country. In his opinion, the present number of men was inadequate for a first-class Air Force. He asked for information as to the types of machines which were being constructed—were seaplanes of the boat type being developed? He suggested that the Minister should closely investigate the work of the Farnborough factory, on which £2,000,000 had been expended during the last five years. As regards the Aeronautical Inspection Department, he thought that they tied the firms up too much. He suggested that if the Air Minister trained up a real engineering personnel inside the Air Force, accidents would be reduced by something like 50 per cent.

In regard to airships, he pleaded that more money should be given for the carrying out of experiments on girders, and urged that the Admiralty should not be allowed to have anything to do with the designs of airships.

Sufficient money was not being devoted to civil aviation, and he wished to know whether there was any check on the million miles supposed to be flown by the Imperial Airways Company, and whether, under the subsidy, that concern was liable to provide new instead of continuing to fly old machines?

He hoped the Air Minister would resist to the utmost the suggestion that the Admiralty should have a Naval Air Service again.

When the Admiralty had an air arm they blocked it at every turn. They smothered the Air Service in its infancy, and then threw it overboard. And yet some people advocated that the Admiralty should have an air service again. He knew that some naval men did not subscribe to that view, but he would ask them, Did any captain of the *Excellent* ever try to help the Air Service to "spot" for their guns? Admiral Bacon said that the shooting of the Cruiser Squadron was deplorable; but did Admiral Beatty ever attempt to develop the shooting of his squadron by aerial "spotting"?

Maj.-Gen. Sir John Davidson said he agreed with Sir A. Sinclair that construction should proceed at a quicker pace, if possible, so as to bring us up to a standard of equality with any European Power. He thought that the Air Service in Imperial defence was not getting proper recognition either from the House, the public, or from the Army and Navy. It would never get that proper recognition from the Army and Navy until we had a more effective system of co-ordination. What was required was a real super-Chief of the War Staff with power to co-ordinate the three Services. We were defending our strategic points in an expensive and inefficient manner by maintaining fixed armament defences instead of utilising aircraft.

Sir P. Sassoon (Under-Secretary for Air) said the Air Ministry was fully alive to the importance of doing everything possible to foster and stimulate civil aviation. It was a definite part of its policy, and the Ministry looked forward hopefully to the time when civil flying would occupy the same relative position towards the Air Force as the Mercantile marine did towards the Navy. But there were limits to the amounts that even the most enthusiastic Air Minister could ask the House to vote.

The Ministry was engaged on a progressive scheme for the expansion of our defence forces, and therefore the greater part of the money voted in these estimates had necessarily to be devoted to the completion of that scheme.

In France the development of the military air forces had progressed at such a pace during the last few years that the necessity for the development of defence did not present itself so imperatively, and more money was available for commercial flying. Therefore, it was not quite fair to compare the £135,000 we were spending on civil aviation with the £600,000, or thereabouts, that was being spent in France.

In Germany the military restrictions imposed by the Allies on aviation left far more money available for civilian aviation, and this country was paying the penalty for the neglect which took place in the years immediately following the War. He emphasised the largeness of the capital expenditure which the Air Ministry was facing. It was bound to swell until

the present home defence plans were completed, but he hoped that it would not recur.

It was only fair to point out, however, that, whereas in 1918 no fewer than 81 men were required to keep one machine in service, in 1923 the figure had dropped to 65, and in 1924 to 21.

Some gratifying improvement was noticed in the number of hours flown per machine in the last four years—they were two and a half times greater than in 1921.

The Air Ministry were fully alive to the importance of establishing and encouraging commercial air routes, and in not allowing this country to fall behind other countries.

Capt. W. Benn asked if anything could be said as to the suggestion made in *The Times* that the Imperial Airways, Ltd., was to take over the Cairo-Baghdad service.

Sir P. Sassoon said the Air Ministry had a very watchful and friendly eye on the development of the air services in the Near East, and on schemes of co-operation with our neighbours in other parts, such as Syria and the route to India. All these matters were having the consideration of the Director of Civil Aviation, and he hoped that he would not be pressed to reply until the Director had returned and made his report. The statement that the proportion of our machines to those of the French was three to one was a perfectly fair one. It was arrived at after making full allowance for all the demands that might be made on the Air Service, whether naval, military or reserve, and it was exclusive of overseas aircraft. The proportion of three to one was fair, even allowing for the deduction of machines for ancillary services from the striking forces.

As regards the Fleet air arm, he could assure the House that no change had taken place whatsoever. The agreement was that the Admiralty and the Air Force settled before the Estimates what the Fleet air arm was to cost, and the amount was placed in the Navy Estimates as a grant in aid for the Air Force. It was the duty of the Air Force to supply to the Navy the whole of the *matériel*. The present arrangement merely crystallised a scheme of co-operation and co-ordination which existed before.

As hitherto, the Admiralty remained solely responsible for deciding how many machines and how much Air Force material were to be placed on the carriers, and the Air Ministry had to furnish the full complement to be carried. The Admiralty had to decide what they needed for these carriers, and had the responsibility for the operation and control of them. It was an undivided responsibility for instruction and design and for training and organisation of the unit.

Sir Archibald Sinclair asked if the Admiralty accepted without reservation the absolute and unified control of the Air Force by the Air Ministry.

Sir Philip Sassoon said the Government did. He was sure that the Admiralty would never put technical difficulties in the way of anybody. Comparisons between aeroplanes were often inaccurate and misleading, but he saw no reason to believe that British machines were not just as good as the machines of any other country. The Air Ministry, however, had no false pride; they were perfectly willing to accept hints from any quarter and to act on them. They had had extremely good results from experiments in flying by night and in foggy weather with directional wireless operated from the ground.

The problem of flying safely by night seemed likely to be dealt with successfully in the near future by a system of lights and leader cables. It was the considered policy of the Ministry to put at the service of civil flying all its experience and all the results of the costly research which it undertook. Imperial Airways, Ltd., had flown a million miles a year, and were keeping to their contract schedule. He saw every reason to believe that the company would take a leading part in commercial flying in Europe in the future. Farnborough was the centre of research work of all kinds, and the Air Ministry did not intend to undertake construction there. Research from the ground was showing extremely good results, and work in connection with helicopters and wireless directional control was proceeding steadily. He could not give information of a most secret character across the floor of the House.

Mr. Ammon said that France was in the position to spend money on civil aviation, while we, deprived of the money which was our due, found ourselves very much behind in our air defences and unable to go forward in regard to civil aviation. He hoped the Air Ministry would take their courage in both hands and establish one control.



Commander Burney said we needed today to have an Imperial stocktaking of the whole of our methods of defence, organisation, and expenditure.

Since the War we had spent over £1,000,000,000 on armaments, and today our expenditure on armaments was at the rate of 2s. in the pound of the income tax.

The lack of any sound doctrine was making our present organisation chaotic. The Air Ministry, in taking responsibility for commercial aviation, was usurping the functions of the Board of Trade, and he was against a fighting department, staffed by persons who had not been trained in commerce, interfering in commercial pursuits. For the first time we had a clear demarcation between the defence of the heart of the Empire and the defence of its outer limbs, the Dominions. The defence of this country was aerial, the defence of the outer limbs was naval. The policy of the Labour Government in throwing over the Singapore scheme, and at the same time voting more money for the aerial defence of this country, was not understood in the Dominions, where it had an unfortunate effect. Unless we could satisfy the Dominions that we were working on some consistent policy, we were not likely to obtain their financial co-operation.

They had not got the money to acquire all the armament that they would like. They had, therefore, to go through a selective process and concentrate on those that were vital. This was not a question of whether the Fleet should have an air arm or of the individual training of men. It was a matter of how they were to demarcate as between expenditure for the defence of these islands and the expenditure necessary for the defence of the Empire as a whole. They would not get any satisfactory solution of this problem of the disbursement of money for the fighting Services until they had a combined staff of the Air, the Navy, and the Army, so that none of the functions of these three forces should overlap. The point he wished to move towards was that it was necessary that the Admiralty and the Air Ministry should be combined into one Department.

The more aircraft developed, the bigger they got, the more they were used so that the crew lived on board and carried all their stores, the more would they become, in essence, what they termed naval vessels today. But they could not have any ordered scheme of evolution as to the interchange of the functions of aircraft and of naval craft unless these two forces were combined. What they wanted was a unified air command. The Admiralty might swallow the Air Ministry or the Air Ministry the Admiralty—it did not matter which it was, so long as they coalesced—but, unless they got this unified air command, he did not see how they were going to cut down unnecessary expenditure. With it, he believed it would be possible to save between £5,000,000 and £10,000,000 a year upon their armament programme, and, at the same time, obtain greater security than was the case at present.

He asked that a Committee should be set up to investigate the matter and report to the Cabinet, so that they might find out how they might become strong at vital points, how to save £5,000,000 to £10,000,000 a year, and how they might stop the continual bickering between Departments.

Mr. Spencer appealed for more generosity for the young married officers in the Air Service. He suggested that if a young officer was killed his widow should receive a pension, although the officer may not have reached the official age for marriage.

Sir A. Burgoyne said the main point of the debate was where the Air Force stood in relation to our general Imperial policy. They wanted a unity of purpose in the whole sphere of defence. The decreasing of the other Services, and the increasing of the Air Force, meant that the latter was going to be the force of the future. He suggested the creation of a Central Minister of Defence, with Under Secretaries for each of the three fighting branches. That had been done in other countries and could be done here. He did not think that civil aviation, which was purely a commercial affair, should be under the control of a fighting Service. More money should be spent on it, and the machines brought up-to-date.

Colonel Wedgwood said that the Labour Party stood for real economy, which might be achieved in the institution of a Ministry of Defence, and the prevention of new competition in armaments with foreign countries.

Commander Bellairs said the question of effecting economy resolved itself into having one supreme Minister, who would be able to say to the experts with regard to a proposed expenditure: "Is it vital, or merely useful?" That meant a Minister of Defence at the head of the three Services.

One point which emerged from the present situation was that the Admiralty had virtually told the Cabinet that they could not maintain an efficient fleet unless they controlled

their own air arm. The Cabinet had shouldered responsibility, and the Admiralty had a scrap of paper which would exculpate them from blame in the event of disaster. But that would not satisfy the public.

He hoped the Cabinet would consider the matter preferably on the lines of amalgamating the Air and Admiralty together. All he cared for was unity of control and command.

Rear-Admiral Beamish thought that the Navy should work in, on, and above the sea, just as the Army should work in, on, and above the land. The necessity for an independent Air Ministry had never been clear to him. The existence of that Ministry complicated Imperial defence and added largely and unnecessarily to our financial obligations.

Colonel Crookshank said he thought the Air Defence Brigades should be in closer co-operation with the Air Force. But the Service could not be left entirely to the Territorial Service. If there was a sudden air raid it would be necessary to call up the ground troops at once, and it would not be possible quickly to get the Territorial troops together to oppose the aerial invader.

Mr. Wells said airships were vital to this country in order to bring the Dominions into closer connection with us, and he hoped the Government would press and do all they could to build airships.

Sir F. Sykes, referring to the expansion of squadrons expressed the opinion that, basically, it was unsound to increase them until a sound standard of efficiency had been achieved. As to the reserves, he could not understand why such a complicated, uneconomical, and overlapping system was necessary, when they could have kept to a simple organisation to carry out the necessity of reserves.

He hoped the Secretary for Air would consider the question of the reallocation of the funds at his disposal in the direction of greater research and experiment and more civil flying throughout the world.

Sir Harry Brittain said whatever Britain's status in the air might be, there was no denial of the fact that we took the greatest possible care in training the finest material it is possible to obtain as pilots, in the organisation of our aerodromes and in the manufacture, the testing, and the re-testing of our aeroplanes and engines. It was universally agreed that no country paid more attention to these all-important details, and he was convinced that the formation of light aeroplane clubs would do much in advancing this great science. On the civil side, although there were countries which might have flown more miles than we had, there was no country which had reduced the risk to a minimum as had this country in the flying of civil planes. The system carried on at the Croydon aerodrome would be very difficult to improve, but it would be an enormous advantage to civil aviation if a site for an aerodrome could be found nearer to the heart of London.

In France there was a huge output in the manufacture of engines and planes, and he wished to ask the Minister if it was possible to guarantee some similar continuity of work in this country, so that orders could be sent out on something like a three years' basis. At present, orders were sent out by the Air Ministry, and the firms carrying out those orders were under high pressure to complete the orders before the end of the financial year. When these orders were completed, there was a lull throughout the whole of the manufacturing firms in the country and a gap in the work, which must tend towards unemployment.

Sir Samuel Hoare, referring to Mr. Snowden's recent statement that neither he nor his party took any responsibility for the proposed Estimates, said that when the Air Estimates were introduced from the benches opposite, Lord Thomson and Mr. Thomas had time after time said that as far as the first stage of the extension scheme was concerned they took full responsibility for carrying them into effect. If Mr. Snowden would investigate he would discover that in almost every case where there was an item for increase of expenditure in this year's Estimates it was due to decisions that were taken when Lord Thomson was in office and when Mr. Snowden, as Chancellor of the Exchequer, authorised the decisions. The 21 millions which the House was now asked to authorise was not only for the Home Defence Squadron, but for the Fleet Air arm services of the Middle East, Army co-operation squadrons, and other squadrons in every part of the world. As the Air Force expanded the overhead charges would tend to decrease.

With regard to home defence, they were going slowly, definitely with the intention of making the foundation as sure as they could, and also of ensuring that the technique and quality should be as high as possible. He thought they were holding the balance equally between the two.

In regard to the two airships which were being built by

the Air Ministry and a private company respectively, everything possible was being done to pool the available expert knowledge, and the freest possible scope was given to experiment. During the last few weeks he had set up a technical committee composed of three of the best-known aeronautical experts in the country, none of whom were officials of the Ministry, to whom technical questions could be referred for impartial decision, both by the Ministry and the construction company.

The question of a more mobile defence of the Empire, by means of which large sums of money now tied up in immobile defences could be saved, was being carefully investigated. He was not going to say that some time or another the country would not have a single Ministry of Defence, but he had always taken the view that a great change of this kind would come about as a result of better co-ordination between the three Departments rather than by suddenly creating a new superman or a new office of supermen. The right course was to take every step to bring the three services more closely together, and he had done all he could to carry that policy into effect. There was now a certain number of Army officers and Naval officers working at the Air Ministry. He was not giving away any confidential information when he said that on more than one important occasion the three Chiefs of Staff had taken collective responsibility for the advice on some big strategical questions that they were offering to the Government.

As to the standard up to which they were building, he said that they were not attempting to set up actual numbers against actual numbers. They were trying to set up an Air Force adequate to protect the country against the strongest Air Force within striking distance. If there was going to be an absorption of service departments as Commander Burney had suggested, it should come when we had, if ever that was possible, a single department and a single Minister dealing with the various questions of defence and strategic

policy. This year he was going to try to start certain long-distance flights within the Empire. It would take some little time, but he hoped to be able to organise during the year flights from Cairo to Cape Town and from Cairo to Lake Chad. This was only a beginning, and he hoped that it would be possible to make these Empire flights year by year and show the flag in the air over a great part of the British Empire. The Secretary for the Colonies and he were shortly going to take a flight to Iraq, and hoped to do in the course of eight or nine days a series of journeys which before the invention of flying would have taken as many months. The object of his journey to Iraq was to see on the spot how far the experiment of garrison by air was succeeding and, where it was possible, to make any saving in the very large expenditure which the taxpayer had to bear in that connection. The question of shelters for the civilian population in time of emergency was being considered by the Air Ministry.

The Report of the Vote was agreed to.

The Reports of the Votes for pay, works, supplies and transport, and technical and warlike stores were also agreed to.

On the last of these Sir S. Hoare, replying upon a short discussion, referred to the reasons for building two airships. A double experiment would be much safer than a single experiment; also, he was anxious to test some of the potentialities of the airships to the full. The actual amount to be spent under the present scheme was about £1,250,000, out of which only about £200,000 to £250,000 will be spent upon the Government airship, the rest of the money, or a greater part of it, "would be usefully spent."

The bases in India had been selected on commercial and not on military grounds. The Government had offered to refer Commander Burney's designs to the Technical Committee, and if the designs were considered practical every facility would be given for their adoption.

## THE NAVY ESTIMATES AND AIRCRAFT

IN the Navy Estimates for the year 1925-26, issued on March 14, the following statements relating to aviation matters are made by the First Lord of the Admiralty.

In reference to the inclusion in the Navy Estimates, for the first time, of a charge of £1,320,000 in respect of the cost of the Fleet air arm:—

This sum is credited in the Air Estimates as a grant in aid of the expenditure for which provision is made in those Estimates. The reason for this arrangement appears to have been misunderstood, but it is quite simple. It has been formally laid down, on the recommendation of the Committee on the Relations between the Navy and the Air Force, that it rests with the Admiralty to formulate requirements for the Fleet air arm. It is obvious, therefore, that it must also rest with the Admiralty to justify those requirements, whether they are challenged from the point of view of adequacy or of economy. It is this Admiralty responsibility that is duly recognised by including the charge in the Estimates for which the First Lord has to answer. The report further states:—

(a) *Fleet Air Arm*.—In accordance with the decision of H.M. Government in 1923-24 on the manning of the Fleet air arm, a commencement was made in June last with the training of naval officers as pilots for service in the Fleet when 50 officers were sent to No. 1 Flying Training School at Netheravon to begin their training. After about ten months on shore—which includes six months' elementary flying training at Netheravon followed by a period at coastal stations, where training is continued on machines of the naval service type and instruction is given in naval air work—these officers will be appointed to relieve an equivalent number of R.A.F. officers as pilots for service in units of the Fleet air arm.

There will in future be four courses a year. Thirty officers were appointed to the second course beginning in January last. With a view to accelerating the permeation of the more senior ranks of the Navy with practical knowledge of air matters which will come about when naval officers trained as observers and pilots reach these ranks, it has been arranged for a few officers of the rank of commander to undergo short courses of flying training. One such course is now in progress.

The training of naval officers for observer duties continues, and the syllabus of the Observers' Course, which has recently been revised, includes training to qualify these officers to undertake reconnaissance observation (hitherto performed by R.A.F. officers) in addition to gunnery spotting observation.

Progress has also been made in the substitution of naval ratings for certain of the R.A.F. personnel serving in the Fleet air arm, under the Government decision above referred to, the number of naval ratings so substituted to date being 250.

(b) *Airships*.—The Admiralty are greatly interested in the development of airships in view of their possible value for the purpose of naval reconnaissance in great oceans. They are engaged in concert with the Air Ministry in studying the designs of mooring masts in ships, which are an important development and, if successful, will enhance the value of airships for naval purposes, reduce base expenditure, and render bases mobile.

The report also states that:—

The work of reconstructing *Furious* as an aircraft carrier is well advanced and will be completed early in the ensuing financial year, and good progress is also being made with other ships in hand for reconstruction.

### R.Ae.C. Banquet to Sir Sefton Brancker

ON March 23, a banquet will be given at the Savoy Hotel, by the Royal Aero Club, to Air Vice-Marshal Sir Sefton Brancker, Director of Civil Aviation, and Mr. Alan J. Cobham, on the successful completion of their flight from England to India and back.

### London-Berlin Air Mails

THE Postmaster-General announces that the letter Air Mails from London to Hanover and Berlin will be resumed on March 13. The Mails will be closed at the General Post Office, London, at 6 a.m. each weekday as before, and will be due to reach the Hanover and Berlin Post Offices at

about 3 p.m. and 5 p.m. respectively the same day. These mails offer, for express letters, delivery in Hanover and Berlin the same afternoon or evening, and for non-express letters accelerated delivery next day at most places in Northern Germany beyond Hanover, e.g., Berlin, Hamburg, Leipzig and Dresden. The special fee payable in addition to ordinary foreign postage is, as before, 3d. per oz.

The letter Air Mail to Cologne, closed at the General Post Office, London, at 6.45 a.m. each weekday and due at Cologne at about 3 p.m., offers advantage for letters to places in South Germany (at a special fee of 3d. per oz.), as well as to places in the occupied areas (at a special fee of 2d. per oz.).



# INTER-SERVICES RUGBY FOOTBALL

## Royal Air Force v. Army

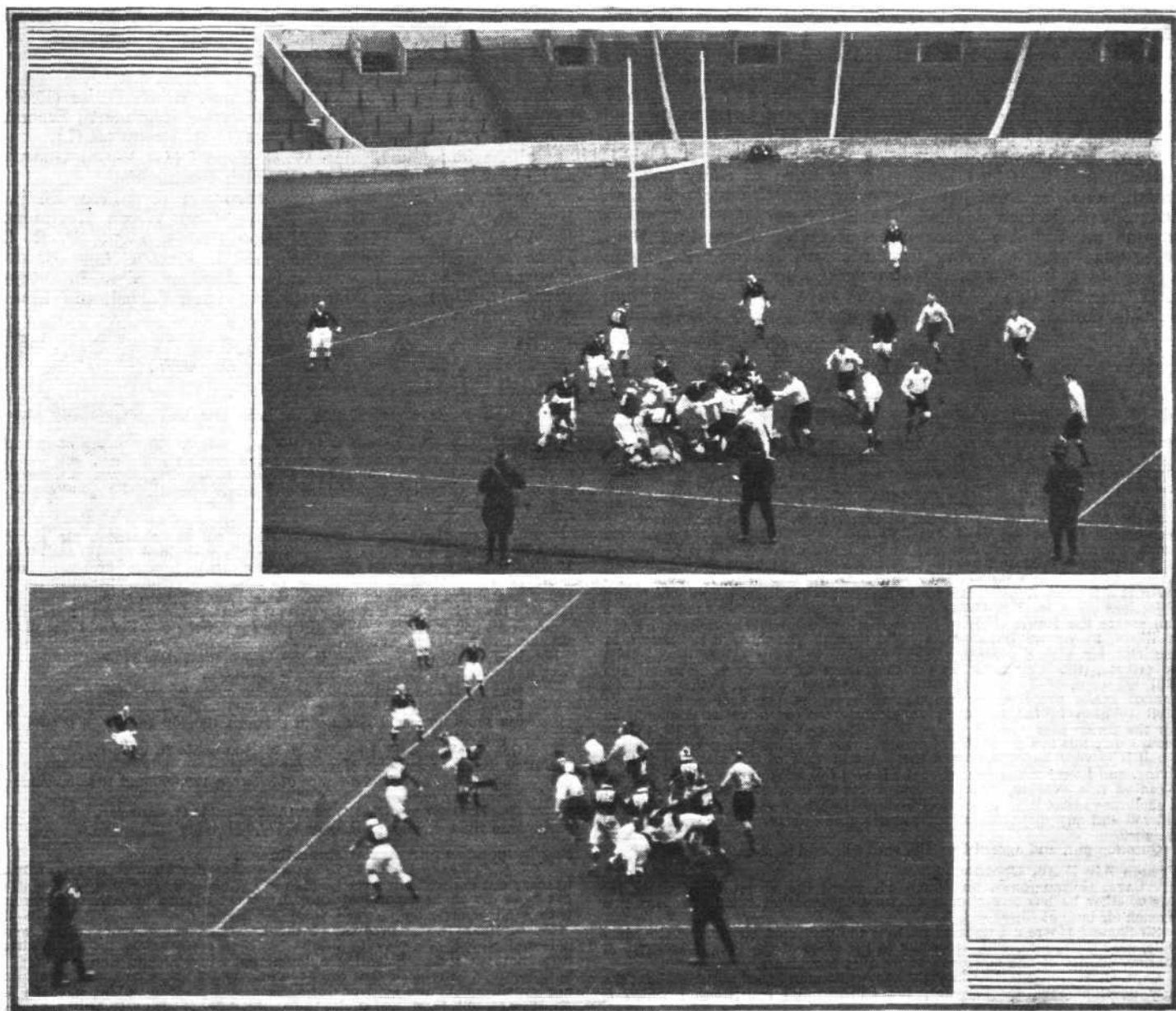
THE last of the three Inter-Services matches was played at the Stadium, Wembley, on Saturday, March 14, and ended in a draw of 2 tries (6 points) all.

The match was a most interesting and exciting one, played at a terrific pace right up to the end, and full of very good play, and also very bad play. On the run of the play, the Air Force may be congratulated on having avoided defeat (though only by a few inches in the last place kick); and yet, when all points of the game are considered, it is not at all easy to put one's finger on the reason why the Air Force did not win. They were much the better balanced team of the two, and they were good at all points—at full back at three-quarter, at half-back, and forward. There was no point at which they failed, or were open to serious criticism, except the tendency to give the other side free kicks. They only gave away six this time, as against 10 when playing the Navy; but a side which gives away 16 free kicks in two matches, and has no penalty goal scored against it, must be possessed of a very fine mascot. Mr. Vile, the best referee who ever blew whistle, did not have to penalise the Army at all.

Perhaps the best praise which can be given to the R.A.F. XV is to say that in the second half of the game, when they were mainly on the defensive, they played harder and more skilfully than they did at the beginning. That being so, it was obviously the eccentricities of the Army team which determined the run of the game. And the Army was a very

eccentric team. The outstanding feature of the game was the really very bad passing of the Army centre three-quarters. It spoilt the possibility of innumerable scores, and no team so weak at such a vital point can deserve to win a championship. R. K. Millar, the Scottish international, who twice scored against the dread All Blacks, never got a decent opening all through this game. G. J. Bryan, on the left wing, was slightly more fortunate, and made the very most of everything which came his way. But it was the Army forwards who made the difference between the first and second halves of the game. In the first, the Air Force pack had the best of them, but in the second the military were inspired with a red fury which overwhelmed everything. Both packs played in the Irish style—that is to say, not by scientific screwing and rushing all eight in unison, but in hectic dashes by two or three individuals who trusted to luck *plus* skill to get the ball on somehow. In this battle of forwards the Air Force badly missed G. R. Beamish, who was helping Ireland to beat Wales at Belfast; and W. F. Brown, of the Army, was likewise wearing the green.

The day was fine and the turf perfect. A very large crowd of spectators was very audible, but scarcely visible in the seats round the Stadium. The first incident of note was a touch down by the Air Force behind their own lines. Soon, however, they were into the Army's 25, and Wale dropped at goal, but the ball hit a soldier. The Air Force kept up the pressure and, after a quarter of an hour's play,



R.A.F. v. ARMY RUGGER MATCH : Above, a tough fight in the Army 25 area ; and below, the R.A.F. break away from a line-out.

Chambers made a grand run, which ended in Lowe slipping over for a try. Lowe was not quite at his best on the day. Once he miss-kicked and found touch behind himself. But when he handled or kicked one nearly always noted a style superior to any other on the field—the style of a master (alas! that we must add a past master) of Rugger. When he went for the line he went like a Siskin.

The Air Force pressure continued, Adams being prominent, and Casey getting the best of an exchange of kicks. Seven minutes after the first try there was a scrum on the Army line. The airmen let the ball out, and again Lowe crossed the line and scored. Once more the kick failed.

Rushes by the Air Force forwards and good work by Marcy (who played a grand game throughout) kept the Army on the defensive, but once Guardsman Powell had a very good shot at goal off a free kick. With the game half-an-hour old the Army gave up attempts at passing and took to kicking forward. Ross, of the London Scots, was prominent in following up, and a fumble by Casey (a most unusual event) let the red jerseys up to the line. The half-time whistle brought relief to a very gallant Air defence.

After starting again, good kicking by Casey and a good run by Marcy gave the Air Force an advantage, but the Army forwards were now rushing hard on to the Air Force backs, Ross again showing up well. Then Chick got away by himself in the most wonderful dribble by an individual forward it has ever been my good fortune to see. He kept the ball at his toes and passed man after man until he had gone quite half the length of the field, and lodged the ball in touch near the Army goal line. A free kick brought the Army relief. Soon after, from a scrum near touch about the centre line, Russell got the ball out and came round the blind side himself. But Bryan intercepted the pass, and dashed away in most determined style, burst through the defence, and finally sent Powell over the line for a right good try. The kick failed.

Fired by this success, the red forwards made a really magnificent combined rush right into the Air territory. Chambers cleared with a good dribble. But the Army forwards were now at the top of their form, and hammered again and again on the airmen's line. Dunn, the captain, ordered his outsiders to drop at goal (obviously the right tactics), and Cass and Phillips both tried to carry out the instructions, but the attempts were feeble. For well nigh 10 minutes (which seemed like 20) there were continuous scrums on the Air Force line. Rightly, distrusting their three-quarters, the Army forwards and halves tried again and again to bullock their way over the line, but the defence held grandly. The Army hooker invariably got the ball at this period. At length, in despair, Powell tried a pass

out to the three-quarters; but so far from adding to the danger, this move brought immediate relief to the struggling airmen. The ball, of course, was allowed to drop tamely to the ground opposite the goal and a sky-blue player dashed up promptly and cleared to half-way.

Shortly after this terrific period, the Air Force got the ball out of a scrum and opened up to their three-quarters from right to left. A very good combined run took the ball up to the Army 25. It was still anyone's game. But the Army forwards brought it back, and at long last their centre three-quarters contrived to get it along to Bryan without making too much of a mess of it. It was a nasty pass which Bryan took, and in pausing to gather it he was nearly tackled. But he shook himself free, quickly gathered pace, and scored finely in the corner. Guardsman Powell's kick was a beauty, and, as there are no scoring boards at the Stadium, many spectators thought he had kicked the goal and won the match. It was the nearest of near things, but it just failed. The whistle blew immediately after, and so the match ended in a draw, leaving the supporters of both sides with the feeling that their men ought to have won.

Teams:—

#### Royal Air Force.

Full back: Aircraftsman W. Casey (Henlow).

Three-quarters (left to right): Corpl. J. M. Wale (Flowerdown), Pilot Officer J. Marcy (Andover), Flight-Lieut. C. N. Lowe, M.C., D.F.C. (Kenley), Flight-Lieut. P. G. Scott (Henlow).

Half-backs: Squadron-Leader J. C. Russell, D.S.O. (capt.) (Upavon), Flying Officer P. J. Chambers (Manston).

Forwards: Flight-Lieut. J. S. Chick, M.C. (Farnborough), Flight-Lieut. E. F. Turner, A.F.C. (Uxbridge), Flying Officer F. W. Sinclair, D.F.C. (Henlow), Flying Officer T. Rose (Duxford), Flying Officer G. D. Adams (Netheravon), Pilot Officer F. V. Beamish (Old Sarum), Corpl. W. Johnson (Ruislip), Flying Officer E. C. Wackett (Uxbridge).

#### The Army.

Full back: Lieut. E. E. E. Cass (1st K.O.Y.L.I.).

Three-quarters (right to left): Lieut. R. K. Millar (R.E.), Captain M. A. Green (Northamptonshire Regiment), Second-Lieut. I. G. Loch (R.E.), and Lieut. G. J. Bryan (R.E.).

Half-backs: Guardsman W. C. Powell (1st Welsh Guards) and Lieut. R. M. Phillips (2nd Welch Regiment).

Forwards: Captain W. H. Stevenson (3rd/16th Punjab Regiment), Captain B. M. Dunn (2nd Welch Regiment) (capt.), Lieut. R. P. G. Anderson (R.E.), Lieut. P. E. C. Honeyman (Royal Scots), Lieut. K. L. Herbert (2nd Border Regiment), Captain J. A. Ross (1st Highland Light Infantry), Lieut. D. Turquand Young (Royal Tank Corps), and Lieut. T. G. Rennie (2nd Black Watch).

## IN PARLIAMENT

### Air Ministry (Croydon Aerodrome Extension) Bill

THE SECRETARY OF STATE FOR AIR (Lieut.-Colonel Sir Samuel Hoare) on March 11 moved to read the Bill a second time, and said: This is a Bill to improve the aerodrome at Croydon, and the Bill is necessary for the purpose of diverting a road that now cuts across the aerodrome. Two years ago the Civil Aviation Advisory Board recommended that this action be taken. Since then we have had the unfortunate accident at Croydon on Christmas Eve, and the report, on that accident, of Sir Arthur Colefax emphasised the recommendation of the Civil Aviation Advisory Board in favour of this improvement. The matter is one of great urgency. A Bill is necessary, as otherwise we cannot divert the part of the road which is known as Plough Lane. The Bill is a hybrid Bill, which means that when the House has given it a Second Reading it goes to a Select Committee, before which any objections from local residents or bodies can be effectively made. But I can assure the House that, so far as the local bodies are concerned, there is likely to be no objection at all. Moreover, there are clauses in the Bill for giving adequate compensation to owners, whether public or private, who may suffer by the divergence of the road. Without the Bill we cannot divert the road, and without diverting the road we cannot make Croydon aerodrome, which is the principal aerodrome of civil aviation in the kingdom, as safe and as extensive as it should be for the traffic that uses it. I hope I have said enough to show to the House that this is a small Bill of an uncontroversial kind, that although it is small it is very important from the point of view of the safety of British flying, and I very much hope that the House will allow me to get the Second Reading this evening, with the knowledge in hon. Members' minds that I shall move that it go to a Select Committee, where any details can be considered and any questions of compensation or of grievance can be properly weighed.

Question put, and agreed to. Bill read a second time.

### French Air Base, Cherbourg

CAPT. GARRO-JONES, on March 11, asked the Secretary of State for Air whether he has any and, if so, what information about the projected French air base at Cherbourg?

Sir Samuel Hoare: I understand that the projected air base at Querqueville, near Cherbourg, will, according to the plans of the French Ministry of Marine, consist of one squadron of fighting aeroplanes.

Capt. Garro-Jones: Has the right hon. gentleman heard nothing about the new developments, for instance, the underground construction which is contemplated at Cherbourg?

Sir S. Hoare: No, sir, I have not.

### R.A.F. Aerodromes

CAPT. A. EVANS asked the Secretary of State for Air whether, in connection with the projected expansion of the Royal Air Force, it is intended to make

use of stations developed during the late war and subsequently closed down?

Sir S. Hoare: The answer is in the affirmative. The policy of the Air Ministry in connection with the expansion scheme has been, and still is to re-open war-time aerodromes in preference to acquiring new sites whenever this course is the more economical, and meets operational requirements.

### Airships

MR. WARDLAW-MILNE asked whether an experimental air service between England and India has been definitely decided upon; and, if so, at what date it is expected that the service can be brought into operation?

Sir S. Hoare: The programme of airship development includes an experimental flight to India by each of the two projected airships, but when this will take place, and a regular service be started, cannot yet be stated.

Mr. Wells asked the Secretary of State for Air the number and size of the airships now in use in America?

Sir S. Hoare: The following is the information desired:—

#### United States of America Army Air Service—

- One small non-rigid airship of 43,000 cubic ft. capacity.
- One small non-rigid airship of 130,000 cubic ft. capacity.
- Six small non-rigid airships of between 180,000 and 200,000 cubic ft. capacity each.
- One small non-rigid airship of 326,500 cubic ft. capacity.

#### United States of America Naval Air Service—

- Three small non-rigid airships of between 170,000 and 182,000 cubic ft. capacity each.
- One rigid airship (Z.R.1) of 2,100,000 cubic ft. capacity.
- One rigid airship (Z.R.3) of 2,472,000 cubic ft. capacity.

### Fog Dispersion and Aerial Experiments

CAPT. A. EVANS asked the Secretary of State for Air whether he is willing to carry out experiments over London in fog dispersion; and if his attention has been drawn to reports of alleged success by the American air service with sand electrically charged from aeroplanes?

Sir S. Hoare: The progress of the American experiments, which were, it is understood, of a private nature, has been reviewed by the Air Ministry from time to time. Scientific opinion, both in England and America, is not, however, convinced that the experiments are based on sound principles, nor satisfied with the evidence of success so far made public, and the Air Ministry cannot, therefore, advise the undertaking of the necessarily expensive tests involved.

### Air Service, Iraq

CAPT. WEDGWOOD BENN, on March 12, asked the Secretary of State for Air the nature of the proposals made relative to a joint Anglo-French seaplane



route from Marseilles via Alexandretta to Iraq; and the reasons for the decision given?

Sir S. Hoare: Tentative proposals were made last year by a French promoter for a French flying-boat service from Marseilles to Alexandretta, and for a combined Anglo-French service from Alexandretta to Iraq. These proposals were made known to the Air Ministry as well as to the French Government. The technical and financial assumptions on which the scheme was based did not appear to the Air Ministry to be valid, and the matter was allowed to drop so far as any question of British support was concerned. It is not known to what extent, if any, the proposals commended themselves to the French Government.

#### Pilots, Machines, and Constructors

MAJ. GLYN asked the Secretary of State for Air what is the total number of pilots' licences now issued; what is the total number of air-worthiness certificates now issued; what is the total number of factories in Great Britain engaged in the production of aeroplanes, seaplanes, and flying-boats,

respectively; and how do all these present-day figures compare for the years 1916, 1920, 1923?

Sir S. Hoare: The number of pilots' licences issued and current on December 31, 1920, December 31, 1923, and March 10, 1925, were 175, 131, and 142, respectively. The numbers of certificates of air-worthiness issued and current at the same dates were 240, 157, and 183, respectively. Such licences and certificates were not issued prior to 1919, and there are therefore no corresponding figures for 1916. The numbers of firms engaged in the production of aeroplanes, seaplanes, and flying-boats were 43, 18, and 17 in the years 1916, 1920, and 1923, respectively; the present number is 20.

#### Air Ministry Costing Department

MR. HOMAN asked the Secretary of State for Air whether a costing department exists in the Ministry?

Sir S. Hoare: There is no separate costing department in the Air Ministry, but branches of the directorates of Contracts and Accounts undertake costing work of a technical and a financial kind, respectively.



London Gazette, March 10, 1925

#### General Duties Branch

The follg. Pilot Officers are promoted to rank of Flying Officer:—H. L. R. Gough; Jan. 14. N. J. Wiltshire; Feb. 14. R. Scott-Taylor; Feb. 15. S. R. Sunnucks; March 9. G. J. Gaynor; March 12. T. R. Wheatley; March 14. Flying Officer G. N. Carroll (Lieut., R.N., retd.), is granted the hon. rank of Flight Lieut.; Jan. 27. Flying Officer E. R. Stafford is transferred to Reserve, Class C; Sept. 2, 1924. Flight Lieut. R. B. Waite relinquishes his short service comm. on account of ill health and is permitted to retain his rank; March 11. Flying Officer R. F. Browne relinquishes his short service comm. on account of ill-health; March 11.

#### Stores Branch

Flying Officer J. J. Ironmonger is granted a permanent comm. in rank stated; March 11. Flying Officer C. E. Whinney is placed on ret. list; March 11.

#### Accountant Branch

The follg. are granted permanent comms. as Pilot Officers on probation, with effect from Feb. 23, and with seniority of Nov. 10, 1924:—A. McBroom, G. Goodall.

#### Medical Branch

Flight Lieut. A. F. Rook, M.R.C.P., D.P.H., is promoted to rank of Sqdn. Leader; March 8.

#### Reserve of Air Force Officers

H. V. Stammers, D.F.C., is granted a comm. in Class A, General Duties Branch, as a Flying Officer on probation; March 10. W. W. Saunders is granted a comm. in Class B, General Duties Branch, as a Flying Officer; March 10.

The follg. are confirmed in rank:—Flying Officers.—J. C. Croft; Feb. 12. D. M. Deighton, A.F.C.; March 9. Pilot Officer.—R. A. Coulthurst; Feb. 14.

Pilot Officer G. Goodall resigns his comm.; Feb. 23. The comms. of the follg. Pilot Officers on probation are terminated on cessation of duty:—C. P. Abbott; Dec. 2, 1924. B. Spaven; Feb. 17.

#### Memorandum

The permission granted to Sec. Lieut. J. G. Hall to retain rank is withdrawn on his enlistment in the Territorial Army; Feb. 6.

## ROYAL AIR FORCE INTELLIGENCE

**Appointments.**—The following appointments in the Royal Air Force are notified:—

#### General Duties Branch

**Air Commodores:** D. L. G. Pitcher, C.M.G., C.B.E., D.S.O., to No. 7 Group H.Q., Andover, to command; 1.4.25. A. M. Longmore, C.B., D.S.O., to Air Ministry, on appointment as Director of Equipment; 1.4.25.

**Group Captain** W. R. Freeman, D.S.O., M.C., to Central Flying Sch., Upavon, to command; 22.4.25.

**Squadron Leader** J. T. Whittaker, M.C., to Aircraft Depot, India; 6.3.25.

**Flight Lieutenants:** G. A. H. Pidcock, to No. 7 Group H.Q., Andover; 27.2.25. S. E. Adams, to Armament and Gunner Sch., Eastchurch; 23.3.25.

S. A. Turner, M.B.E., to No. 2 Flying Training Sch., Digby; 2.3.25. W. V. Simons, to No. 1 Flying Training Sch., Netheravon; 2.3.25. N. C. Seward to No. 3 Sqdn., Upavon; 16.3.25. E. R. Whitehouse, to No. 9 Sqdn., Manston; 20.3.25. G. W. Biles, D.F.C., to No. 5 Flying Training Sch., Sealand; 16.3.25.

B. R. Carter, A.F.C., to No. 99 Sqdn., Bircham Newton; 19.3.25. W. V. Hyde, to No. 3 Sqdn., Upavon; 19.3.25. J. A. Slater, M.C., D.F.C., to No. 3 Sqdn., Upavon; 1.4.25. W. E. C. B. Forsyth, to Sch. of Tech. Training (Men), Manston; 18.4.25. H. I. T. Beardsworth, to No. 99 Sqdn., Bircham Newton; 1.4.25.

**Flying Officers:** H. E. Kirk, D.C.M., and E. A. Scales, to Inspector of Recruiting; 1.4.25. S. H. Cooper, to Sch. of Army Co-operation (No. 16 Sqdn.), Old Sarum; 16.3.25. W. G. Jones, to No. 99 Sqdn., Bircham Newton, instead of to No. 58 Sqdn., as previously notified; 18.3.25. F. C. T. Rowe, to H.Q., Palestine; 24.2.25. H. A. J. de S. Barrow, to Sch. of Army Co-operation (No. 16 Sqdn.), Old Sarum; 16.3.25. G. R. Oliver, to Electrical and Wireless Sch., Flowerdown; 13.4.25. W. R. Day, to No. 56 Sqdn., Biggin Hill; 31.3.25. F. K. Damant, D.F.C., to No. 41 Sqdn., Northolt; 1.4.25. W. Morgan, to Inland Area Aircraft Depot, Henlow; 1.4.25. T. N. Stack, to No. 58 Sqdn., Worthy Down; 22.4.25. H. J. Tove, to No. 1 Sch. of Tech. Training (Boys), Halton; 1.4.25.

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## CORRESPONDENCE

The Editor does not hold himself responsible for opinions expressed by correspondents. The names and addresses of the writers, not necessarily for publication, must in all cases accompany letters intended for insertion in these columns.

### SUPERCHARGING AND COL. FELL'S PAPER

[2090] The ways of the powers that be are truly marvellous. In the summer of 1917 the idea of supercharging aero engines for altitude work occurred to me, and I made efforts (in the R.N.A.S.) to have it tested, as it seemed to offer a means of shortening the War. The inertia of those who ought to have moved was so great, however, that no velocity ever became measurable. In the seven or more years which have elapsed since then the idea seems to have gathered a certain amount of momentum, with the result that Col. Fell wants to complicate light 'plane engines by fitting them with superchargers, though he admits that reliability, easy maintenance, long life, and cheapness are essentials—i.e., simplicity. It seems obvious that the supercharging of racing cars to which he refers is purely to get round the capacity rating (which he condemns for light 'planes).

So far as I am aware, there is no British aero engine fitted with a supercharger, and the fact that the powers that be would like to fit them to "hedge-hopping" aeroplanes instead of to machines for high flying seems to show that the sign of the seven years' momentum is negative and that officialdom is running backwards (if it is capable of such rapid movement at all).

If the Technical Department of the Air Ministry could only be fitted with a supercharger, so as either to increase vastly its output of useful contribution to the progress of aeronautics, or (preferably) to increase its revolutions so much that it disintegrated entirely and left those with the necessary enthusiasm free to use their brains for the benefit of civilisation, the serviceable light aeroplane would probably be very much nearer than it appears to be today.

Regarding the defining of a light 'plane, might I suggest that, if this is really necessary at all at present, it might be advisable to lay down a maximum permissible landing speed. One of the main advantages of the type is its safety, owing to low landing speed, and if a definition is either by capacity or weight, or even by both, it will include fast-landing machines on which serious crashes will be much more frequent, and which will spoil the reputation for safety which the slow-landing machines should otherwise quickly obtain.

Edrington Castle, Berwick-on-Tweed.

March 1, 1925.

W. E. GRAY

### L.S.D. AND FLYING

[2091] You constantly refer in your editorial columns to the need for "finding" the right kind of young man for sporting flying, and private ownership; as one of many who would only too gladly fall into these classes, may I point out that the only discovery required is the right kind of bank balance.

The young men (in numbers to support the industry) have not the wherewithal, while the majority of the old men with the means are dead from the neck up; interest these latter.

The smallness of this country, the prevalence of bad weather and small fields, the presence of a perhaps too cautious Air Ministry; these factors would seem to restrict a wide use of light aircraft (Avro Baby and D.H. Moth).

How many men would buy 2-seater cars at the present price of the D.H. Moth? and then have all the signing up every time one wished to go anywhere, which would be very often with the machines mentioned.

Well, time flies anyway. I will not encroach more upon yours.

G. M. RANDALL

### ENGINE FAILURES AND FORCED LANDINGS

[2092] There seems to be a further point which Mr. Bramson might have added to his case for the three-engined machine. Mr. North's formula, which he quotes, assumes the attempted completion of all flights on the two remaining engines. If an air route is divided into sections by the provision of emergency landing grounds where the third engine may be repaired (which might be worth while for minor troubles), the figures given by the formula for the chances of a forced landing would require to be further reduced by dividing by the number of sections if the pilot were always to carry on to the next landing ground, or by twice the number of sections if he were to make for the nearest landing ground as soon as one engine failed.

There is the further advantage over the single-engined machine in that even with only one engine in action the pilot has approximately four times the area available to forced land in.

Edrington Castle,

Berwick-on-Tweed.

W. E. GRAY

## SOCIETY OF MODEL AERONAUTICAL ENGINEERS (London Aero-Models Association)

THE Society will open the flying season with a meeting at Easter for tuning up models preparatory to the commencement of this season's competitions. The meeting will be held on the Sudbury Ground at 2.30 p.m., Saturday, April 11, weather permitting. A cash prize will be offered for the best duration (officially timed) by a glider, either fuselage or spar type. Members intending to be present are asked to notify the Competition Secretary, Mr. B. K. Johnson, 46, Norton Road, Wembley.

A. F. JONES, Hon. Secretary.

### IMPORTS AND EXPORTS, 1924-1925

AEROPLANES, airships, balloons and parts thereof (not shown separately before 1910). For 1910 and 1911 figures see "FLIGHT" for January 25, 1912; for 1912 and 1913, see "FLIGHT" for January 17, 1914; for 1914, see "FLIGHT" for January 15, 1915; for 1915, see "FLIGHT" for January 13, 1916; for 1916, see "FLIGHT" for January 11, 1917; for 1917, see "FLIGHT" for January 24, 1918; for 1918, see "FLIGHT" for January 16, 1919; for 1919, see "FLIGHT" for January 22, 1920; for 1920, see "FLIGHT" for January 13, 1921; for 1921, see "FLIGHT" for January 19, 1922; for 1922 see "FLIGHT" for January 18, 1923; for 1923, see "FLIGHT" for January 17, 1924; and for 1924, see "FLIGHT" for January 22, 1925.

|          | Imports. |       | Exports. |         | Re-Exports. |       |
|----------|----------|-------|----------|---------|-------------|-------|
|          | 1924.    | 1925. | 1924.    | 1925.   | 1924.       | 1925. |
| Jan. . . | 2,213    | 3,546 | 52,239   | 83,728  | 2,219       | 291   |
| Feb. . . | 920      | 985   | 26,349   | 85,639  | 335         | 20    |
|          | 3,133    | 4,531 | 78,588   | 169,367 | 2,554       | 311   |

### PUBLICATIONS RECEIVED

*Motor Cycling Manual*.—The Temple Press, Ltd., 7-15, Rosebery Avenue, London, E.C.1. Price 2s. 6d. net.

*Aeronautical Research Committee, Reports and Memoranda: No. 929 (Ae. 151)*.—Some experiments on a Slotted Aerofoil. By H. B. Irving and A. S. Batson. May, 1924. Price 1s. net. No. 937 (Ae. 158).—Measurements of Lift, Drag, and Pitching Moment on the One-Fifth Scale Model of the Bristol Fighter with Airscrew Running. By E. F. Relf and L. J. Jones. July, 1924. Price 1s. net. H.M. Stationery Office, Kingsway, London, W.C.2.

### AERONAUTICAL PATENT SPECIFICATIONS

Abbreviations: Cyl. = cylinder; i.e. = internal combustion; m. = motor. The numbers in brackets are those under which the Specifications will be printed and abridged, etc.

#### APPLIED FOR IN 1923

Published March 19, 1925

- 29,146. ARMSTRONG-SIDDELEY MOTORS, LTD., and J. LLOYD. Joints for tubular frame members. (229,379.)  
29,366. D. J. MOONEY. Metal construction for aircraft. (229,389.)  
29,371. H. N. WYLIE. Door for aircraft sheds. (229,391.)  
29,778. S. E. SAUNDERS and B. THOMSON. Landing apparatus for flying-boats. (229,409.)  
30,802. SOC. INDUSTRIELLE DES METAUX ET DU BOIS. Construction of aeroplanes. (208,701.)

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